OCTOBER, 1952

Industrial FINISHING

Published Monthly in the Interest of Product Cleaning and Painting by Practical Publications, Inc., 1142 N. Meridian Street, Indianapolis 4, Ind.

hammer finishes

THAT LOOK BETTER . . . LONGER

For a smooth, durable, attractively patterned finish that may be applied in a single coat, check on the possibilities of a hammer finish by Advance.

Advance finishing technicians are ready to formulate a hammer finish, in either baking or air drying quality, to make your product look better . . . longer.

Advance PAINT COMPANY

Indianapolis Indiana

MANUFACTURERS OF INDUSTRIAL FINISHES

TO GIVE YOUR PRODUCT A GOOD START, GIVE IT AN INTERCHEMICAL FINISH!

Undercoats . . . Varnishes . . . Lacquers . . .
Enamels for Metal . . . Plastic . . . Wood

AULT & WIBORG, MURPHY, ROXALIN, AND IC ARE TRADEMARKS OF INTERCHEMICAL CORPORATION

IN CANADA, SIMILAR PRODUCTS ARE MADE AND SOLD BY AULCRAFT PAINTS LIMITED, TORONTO, UNDER THE TRADE NAME "AULCRAFT PAINTS".

room with bath . . . $124.50 per day

Too much?
Recently a large appliance manufacturer found he'd been paying it for years—$124.50 per day for 10 spray booths! He found his dollars were being burned up by production shut-downs, extra time and money for maintenance, spoiled production, unreclaimable paint, and booth operating troubles.
How much are these things costing you?

CUT COSTS with DuBOIS

SPRAY BOOTH MAINTENANCE

Here's what you get when you do business with DuBois:

1. Thorough analysis of your operations by trained and experienced personnel.
2. Installation of prescribed specialized compounds:
   KLARIFIANTS . . . water-wash compounds to effectively control overspray
   FILMITES . . . coatings for dry areas of spray booths
   STRYPP . . . for periodic purging of old paint deposits in the hydraulic system

FREE . . . authoritative reprint:

PROBLEMS OF SPRAY BOOTH MAINTENANCE

. . . . yours for the asking, a survey of the practical aspects of paint booth maintenance—how to save operating costs.

The DuBOIS Co., Inc.
Cincinnati 3, Ohio • Los Angeles 33, Calif.
Serving Industry Since 1920

"Harvest" finish colors for HASTINGS SQUARE collection

FINISH... a part of vitality

The Hastings Square collection by the Grand Rapids Bookcase and Chair Company was designed by William Pahlman to answer the need for a group that represents the vitality of today, while blending with the fine pieces of past generations.

This challenge to Pahlman's designing skill was also a challenge to our team of finish specialists. Theirs was the job of matching the finish to the spirit and vitality of the lines worked in walnut, teak and oak. From our creative studios came "Harvest", a practical finish that met the demands of this adaptable group.

The better the Finish, the better the Buy

GRAND RAPIDS VARNISH CORPORATION

Makers of the Famous Guardsman Finish and Guardsman Cleaning Polish

GRAND RAPIDS, MICHIGAN

OCTOBER, 1952
Vol. XXVIII, No. 12

CCA

A monthly magazine for finishing room and paint shop foremen, production superintendents, chemists, purchasing agents and company executives of industrial plants where product surface cleaning and finishing are major operations in the manufacture of parts and products.

Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

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28 TWENTY-EIGHTH YEAR OF PUBLICATION

Two-Tone Furniture. At a recent showing in New York, furniture containing light and dark woods, with brass trimmings, was displayed. Dark walnut and pale colored maple offered a striking combination. Walnut was used for the frames of side chairs and bases of chests and tables, while light maple was used in table tops, drawer fronts and cabinet parts of chests. Some of the rounded legs were tipped with gold colored brass. The same colored metal was also used to tip the ends of dark walnut drawer pulls planted on light maple drawer fronts.

* * *

Prints on Rubber, Plastics. A new process has been discovered, a one operation method of transferring multi-colored designs and printing from paper to rubber or plastics. The ink transfer process, called Anolith, gives a true reproduction of 300-screen halftones in color; it shows up brilliant and sharp, and will last as long as the surface of the rubber. A slight curing operation permanently seals the impression.

* * *

Super Inspector. A new device has been developed to detect flaws in automotive, aviation, railway and ordnance equipment. Parts are treated with a fluorescent material which either magnifies or penetrates the fault. A photo-electric eye in the device detects the imperfection. It is intended to replace human inspection on production lines.

* * *

Research may be divided into two categories, fundamental and practical. As a result of practical research, discoveries and inventions are introduced commercially. Fundamental research solves difficult industrial problems by sound theory. For example, the Du Pont laboratory spent millions of dollars in developing the theory of polymerization without which many

This sports car has the first plastic body to be placed into production on a commercial scale. The body is a combination of Vibrin polyester plastic produced by Naugatuck Chemical Division of United States Rubber Co., and glass fiber. The body is produced by the Glasspar Co. of Costa Mesa, Calif., and is available to persons who wish to mount it on their own chassis. Any damaged places can be repaired.

TINTONE

From the Start Consider the Finish

For the clearest—richest most beautiful FINISH consider starting with DOLAN'S newest development in

WOOD FILLER

TINTONE

FILLER is the foundation for a perfect FINISH.

TINTONE provides a clear, clean transparent color, free from spotting, greying or hazing. It wipes easily—fills perfectly—reduces puffing and shrinking.

Final rubbing is minimized because of the smooth level surface provided by **TINTONE FILLER.**

Available in all shades of mahogany, Walnut and Blonde FINISH.

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INDUSTRIAL FINISHES

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We make nothing but **thinners**—For over a quarter of a century, we have been saving money for big and little customers. They like us because we make the thinner they want at a **money-saving price.**

Let us show you how a Lacquer Thinner **SPECIALIST** can supply you with the **right** Thinner . . . and still save you money.

Just fill out form below and mail today. We'll work out a Thinner *especially for you*, and send a sample. We know we can **save** you money.

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CORTLAND 1, N. Y.
THINNER SPECIALISTS

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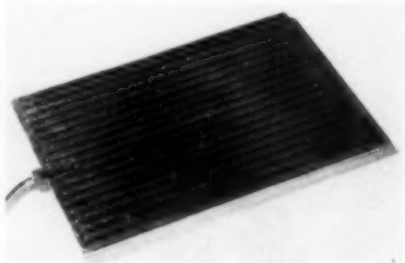
We use Lacquer Thinner on:
☐ Metal ☐ Wood ☐ Other_____
We want it to dry:
☐ Fast ☐ Slow ☐ Medium

Name_____
Address_____
City_____ Zone____ State_____

of our modern coating materials would not be possible. Also, without this theory, it is duobtful if nylon and other synthetic fibers could have been developed.

* * *

Warms Your Feet. Electro Mat, developed by a rubber products firm in Los Angeles, is a foot warmer for people who are obliged to stand or sit where their feet may become cold.



Foot warmer for use in office and factory.

An attached electric cord plugs into the outlet of any electric light circuit. The mat is 14x21-in. and weighs about 5-lbs. May be needed this winter. Name and address supplied on request.

* * *

Home Decoration. An inexpensive new beauty treatment for your home, one designed to enhance the appearance of your present furnishings, is prescribed in "Colors for Your Home", The Glidden Company's practical new book for homemakers.

The deft professional touch of the color expert can be achieved by the amateur interior decorator through use of the new book, which is built around the 180 sparkling decorator colors and more than 4000 color combinations available in easy-to-use, washable latex base paint. It contains 32 room illustrations and 23 elevations all expertly printed in full color, and 144 additional color recommendations.

Hammered Finish

LANDAU

LANATONE®

needs no special spraying equipment!

- Synthetic hammered finish in 24 colors!
- Touch dries in 10 minutes — dries to pack in 3 hours!
- Tough as baked finish in 48 hours!
- No special spraying technique required!
- also available in baking types

FREE TEST SAMPLE ON REQUEST

J. LANDAU CO.

221 Wooster Street, New York • Factory: Carlstadt, New Jersey

Safety for Gas Users. A new type automatic gas cut-off valve has been developed by the Kelly Safety Device Co., Cleveland, Ohio.

The Kelly-Byrne positive safety valve is designed for use with natural and manufactured gas, and is primarily intended to be placed on a building's gas supply line in front of the gas meter. In event of a fire a fusible link, made of B. F. Goodrich Chemical Co.'s Geon 404 plastic, distorts at approximately 165° F, forcing a tension spring to close the valve. This will prevent the discharge of gas from a melted gas meter.

* * *

Bright Aluminum. A new aluminum alloy, known as Alcoa C-57-S, will take an unusually brilliant alumilite finish. It can be made in various colors; has possibilities for replacing chrome and stainless steel. The alloy has been used successfully for gift ware and refrigerator trim. It is indicated that it may be used for automobile trim, and should find wide use in the furniture field.

* * *

What Safety Did. H. S. Simpson, Caterpillar safety engineer, said accident frequency during the first half year was 2.81 cases per million man hours of work and lost time accident experience was well below 1950, Caterpillar's safest year.

May 1952, he said, was the safest month in history, with lost time accident frequency that month of only 1.98 cases per million man hours of work for the Peoria Plant.

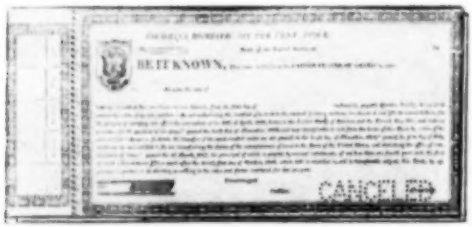
This is largely true, Mr. Simpson feels, because of Caterpillar's safety minded supervisors and the monthly safety meetings which have helped to

(Continued on page 118)

BILLY BOND presents:

★ *A series of Historical Government Bonds. Here is a reproduction of the second bond issue of the United States.*

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★



1803 LOUISIANA PURCHASE
Added 827,987 Square Miles to the U.S.A.

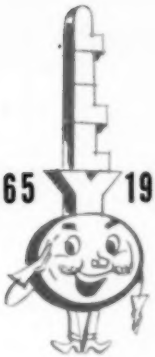
When President Jefferson purchased Louisiana from Napoleon for $15,000,000 the Secretary of the Treasury, Albert Gallatin, proposed an $11,250,000 issue of 6% stock redeemable after 15 years. This stock or bond issue was very readily negotiated as people were anxious to subscribe to it. There was no difficulty in paying for this greatest bargain in history.

1812 — WAR For FREEDOM OF THE SEAS

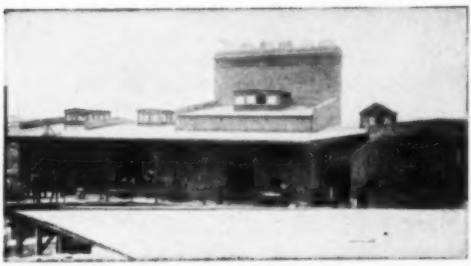
The third bond issued by the U. S. is almost identical to the one above, therefore reproduction will be omitted in this series. Next reproduction will be the issue of 1846—"THE YEAR OF DECISION".

THE Lilly COMPANY
FINESTES
High Point, N. C.

★ ★ ★ ★ 1865 1952 *BILLY LILLY says:*



SINCE 1865 when Lilly's first finishing materials were formulated and manufactured, American industry has been buying and using Lilly's Dependable finishes in ever increasing quantities. Through all wars (except the first two, 1775 and 1812) and through all national (and international) crises, the acceptance of Lilly's Dependable finishes has been constantly increasing, so that today we have three Lilly plants advantageously located and ready to serve you with the right finish, so that—



The original Lilly Varnish plant 87 years ago.

"WITH THE RIGHT FINISH—YOU'LL FINISH RIGHT"

Lilly FINISHES

VARNISH COMPANY

Indianapolis, Indiana

Gardner, Mass.

New Spray Booth design shortens booth cleaning time

...OFFERS 3 OTHER IMPROVEMENTS

Here's how...

Binks NEW Dynaprecipitor Spray Booth uses a new combination of washing and centrifugal force to remove pigment from overspray and thereby shorten booth cleaning time. Waterwashes at the points marked ● in the illustration scrub out the paint particles suspended in the air.

By making sudden changes in the direction of air flow at the points marked ★, centrifugal force flings the remaining paint particles from the air onto the booth's washed surfaces.

Binks new booth shortens cleaning time because there are no areas on the water curtains or baffle plates where paint can build up. Every surface the pigment contacts is constantly flushed. Cascading water washes all pigment down into the collection pan.

Binks new booth shortens cleaning time because the new self-scouring baffle plates and major water curtain can be quickly removed without tools for maintenance and inspection.

What's more—Binks new spray booth also gives you...

Floor space economy. The collection pan on this booth occupies less floor space. It still contains, however, ample capacity for the collection of heavy solids and light pigments in its front section. These solids and pigments are removed by skimming. Notice the divider plate that prevents their recirculation.

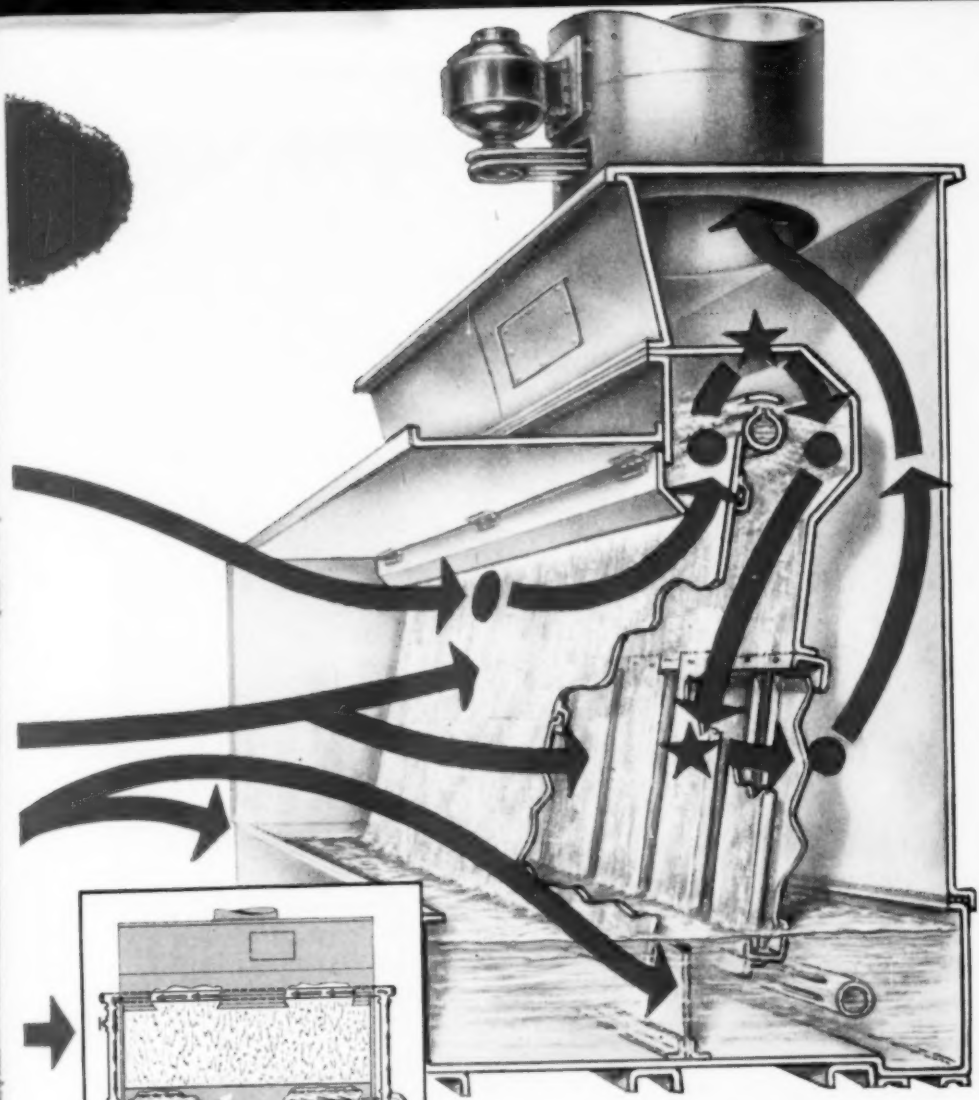
Water Economy. The same water is used over and over again. The only make-up water needed is that required to compensate for slight evaporation.

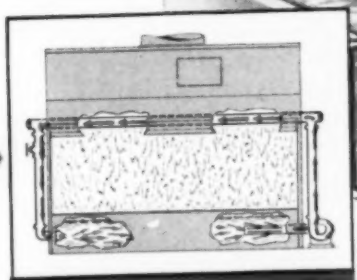
Protection against fire and explosion hazard. This booth removes pigment and vehicle so efficiently that Binks guarantees every Dynaprecipitor installation to exceed the requirements of fire, health, and state authorities.

Send for your FREE copy of Bulletin DUC...

shows how you can save time and money with this new booth. Facts that back each claim are thoroughly explained with pictures and sketches. See your Binks distributor or write to:

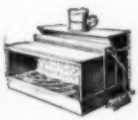
Binks Manufacturing Company
3116-40 Carroll Ave., Chicago 12, Ill.

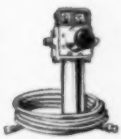




Binks

EVERYTHING FOR SPRAY PAINTING





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Thousands of gallons of industrial finishes are supplied by The Forbes Division to General Fireproofing Company for metal office equipment.

Right aluminum sheets receive a spray coating of Forbes' clear synthetic enamel as they move toward a drawer conveyor at the far end of plant.

PITTSBURGH

PAINTS • GLASS • CHEMICALS

PITTSBURGH PLATE

Maker

Of Metal Office Furniture Uses Pittsburgh Enamels

Tough, long-lasting finishes add beauty and durability to modern, streamlined equipment made by General Fireproofing Company

THERE is no better proof of the quality and performance of Pittsburgh Industrial Finishes than the continued use of these famous coatings by outstanding manufacturers.

For instance, the Forbes Finishes Division has furnished the General Fireproofing Company of Youngstown, Ohio, Pittsburgh Industrial Enamels for many years to make its products look better and last longer. Recognized as the world's largest manufacturer of metal desks and office chairs, General Fireproofing is famous also as the maker of one of the finest complete lines of steel and aluminum furniture for trains, buses, steamships, hotels, banks, and other installations.

By working with GF's technical and engineering staff, Pittsburgh has produced high quality enamels to meet General Fireproofing's finishing requirements. These coatings provide exceptional adhesion, toughness, and durability. Because they are so easy to apply, they speed up production and save manufacturing costs.

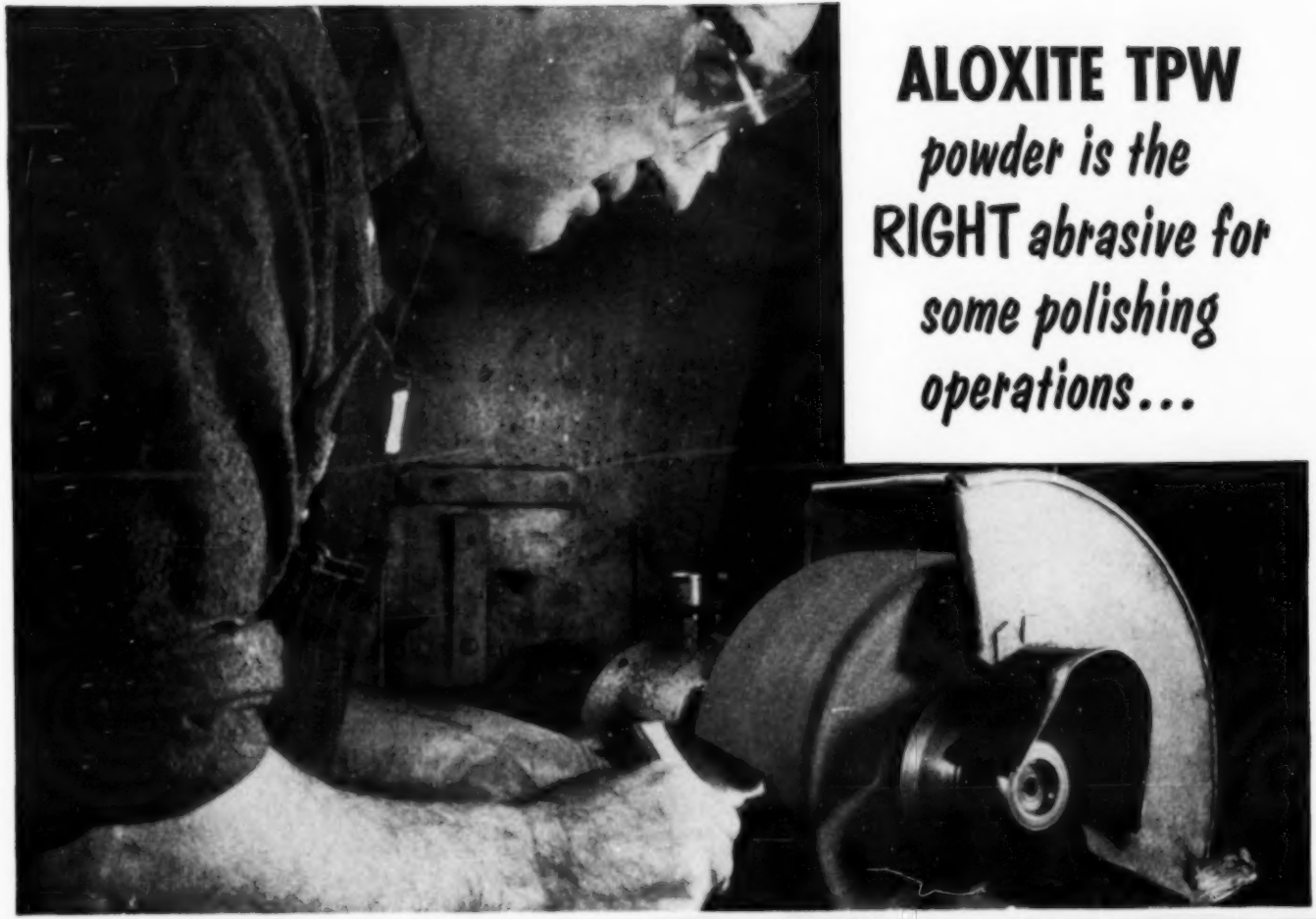
PITTSBURGH PLATE GLASS COMPANY
Industrial Paint Div., Pittsburgh, Pa. Factories: Milwaukee, Wis.; Newark, N. J.; Springdale, Pa.; Atlanta, Ga.; Houston, Texas; Los Angeles, Calif.; Portland, Oregon. Ditzler Color Div., Detroit, Michigan. The Thresher Paint & Varnish Co., Dayton, Ohio. Forbes Finishes Division, Cleveland, Ohio. M. B. Suydam Div., Pittsburgh, Pa.

Free Advisory Service

General Fireproofing is just one of many manufacturers with whom Pittsburgh has worked in developing highly specialized finishes. This broad experience may be helpful in saving you time and money. Write, wire or phone the Pittsburgh Paint plant nearest you. We'll be glad to have one of our engineers discuss your finishing problems with you at no cost or obligation.

PAINTS • GLASS • PLASTICS

GLASS COMPANY



ALOXITE TPW
powder is the
RIGHT *abrasive for*
some polishing
operations...

...but the right one for ALL operations is bound to be among the other six in the complete line by CARBORUNDUM

ALOXITE TPW powders, of aluminum oxide in grits 240 through 1000, are ideal for general purpose polishing operations wherever closely graded fine abrasives are called for. Their controlled structure, toughness and temper are your guarantee of precision performance. If that's your problem, ALOXITE TPW powders are *right* for you!

	GRAIN TYPE	CHARACTERISTICS	PRIMARY USES
1	**ALOXITE TP** Aluminum Oxide	Tough, blocky. Standard grit sizes from 16 through 220.	Polishing operations involving heavy stock removal on steel and other high tensile strength metals.
2	**ALOXITE TPT** Aluminum Oxide	Tough, sharp. Grits 16 through 100.	Polishing operations involving removal of large amounts of metal (e.g. plowshares).
3	**ALOXITE TPL** Aluminum Oxide	Very sharp, friable. Grits 16 through 220. (It fractures during use, thus reduces loading of the wheel surface.)	Polishing low tensile strength metals—copper, brass, bronze, aluminum.
4	**ALOXITE TPC** Aluminum Oxide	Medium sharp. Grits 16 through 220.	General purpose polishing grain—for removal of comparatively small amounts of metal.
5	**CARBORUNDUM RA** Silicon Carbide	Sharp, very friable. Grits 10 through 240.	Polishing cast iron.
6	**CARBORUNDUM RA** Silicon Carbide	Powder. Grits 280 through 600.	General purpose polishing.

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83-57

Get the facts on—

DESPATCH

Engineered

METAL WASHING EQUIPMENT

for your plant

No matter what your metal washing problem, whether it be a simple washing job, an intricate surface preparation, a space limitation, or what have you, there is a Despatch Metal Washer to take care of it, or one can be built for the purpose.

Washer Bulletin No. 68 will give you the facts on Despatch engineered metal washing equipment . . . will tell you how to select a washer . . . will show you metal washing systems built to meet specific needs . . . will convince you that you can save time and money with Despatch engineered metal washing equipment. Write for your FREE copy today.

DESPATCH *Engineers, Fabricates and Installs*
COMPLETE FINISHING SYSTEMS TO MEET EVERY NEED

Because of space limitations, Despatch designed, fabricated and installed this complete finishing system on the factory roof for a leading mid-western refrigerator manufacturer.

Complete finishing systems designed and engineered by Despatch are at work in hundreds of leading industrial plants throughout the country. Engineered and coordinated to operate as single units, they consist of metal washers, dry-off ovens, paint spray booths, finish bake ovens, air make-up systems. They are turning out thousands of different products, large and small on fast, efficient production schedules.

Without obligation Despatch engineers will gladly analyze and advise regarding your finishing needs. Act today so that you'll be prepared tomorrow to cut production costs, increase profits. Write or wire to Dept. E.

FIFTIETH ANNIVERSARY

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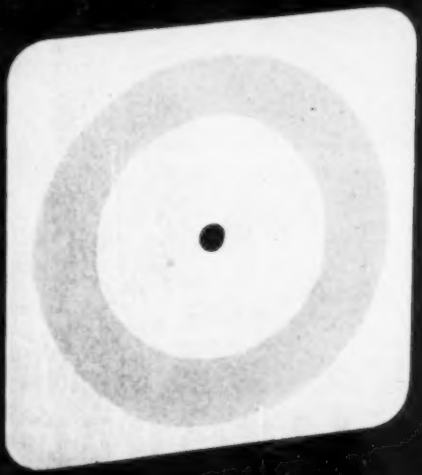
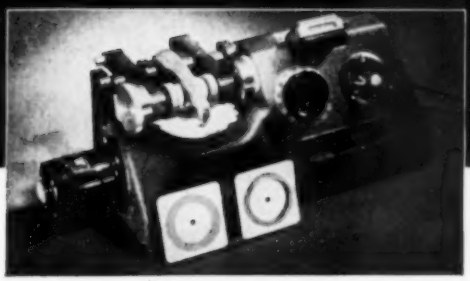
Representatives in Principal Cities

Why EPON RESIN finishes have unique abrasion resistance



EPON ENAMEL

STANDARD ENAMEL



The unparalleled toughness of an EPON resin finish is plainly evident in this test.

The Set-Up. Two metal panels, one coated with a widely used enamel, the other with an Epon resin enamel, rotate 1000 times on a turntable. Two abrasive wheels scrape each revolving panel.

The Result. The Epon resin finish shows no wear other than a slight decrease in gloss. The conventional enamel is completely worn away.

The Reason. The Epon resin molecule is of an entirely new class of condensation polymers. The molecule is so formed that it is inherently hard and imparts outstanding wear resistance to finishes. Epon resin surface coatings also have unusual flexibility and high resistance to detergents, caustic solutions, many acids and stain-producing agents.

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Eliminate "Heavy Overtime"

PEEL SPRAY-BOOTHS CLEAN WITH LIQUID ENVELOPE

Good men are hard to get today. Why waste their time and your money—on the "jack-ass labor" job of scraping down spray-booths? Keep your booths clean, firesafe, better illuminated, better ventilated by using "LIQUID ENVELOPE".

Simply spray on with your regular spray-equipment. When overspray accumulates, break film and peel off in great big sheets. Takes only a few minutes for a 12 x 12 booth. Actually costs less than the hand-labor way. Order a 5-gallon Test Sample (Drum Lot Price on test-sample order!)

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The Plastic Paper Co., Los Angeles, Calif.
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2105 SILVER LACQUER
• A BUFFING LACQUER •
This lacquer is exceptionally well adapted for silver. It can be used with good results on other metals. Goods lacquered with Nikolas 2105 Silver Lacquer can be successfully engraved.
• • DIRECTIONS • •
Reduce 2 parts lacquer with one part 2105 thinner. Spray with 60 pounds air pressure. Baking at 175 degree Fahrenheit is beneficial.
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- **Fast Drying**
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- **Non-Discoloring**
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Eliminate hazardous solvent cleaning and expensive chlorinated degreasing installations. Find out about KLEM'S new Rust-Sol—a concentrated phosphoric acid cleaner that gives metal a slight etch which provides an excellent paint bond. Rust-Sol imparts a neutral iron phosphate coating to the metal surface for long paint life. Rust-Sol is suitable for a wash off or wipe off type application or can be used in immersion and spray systems.

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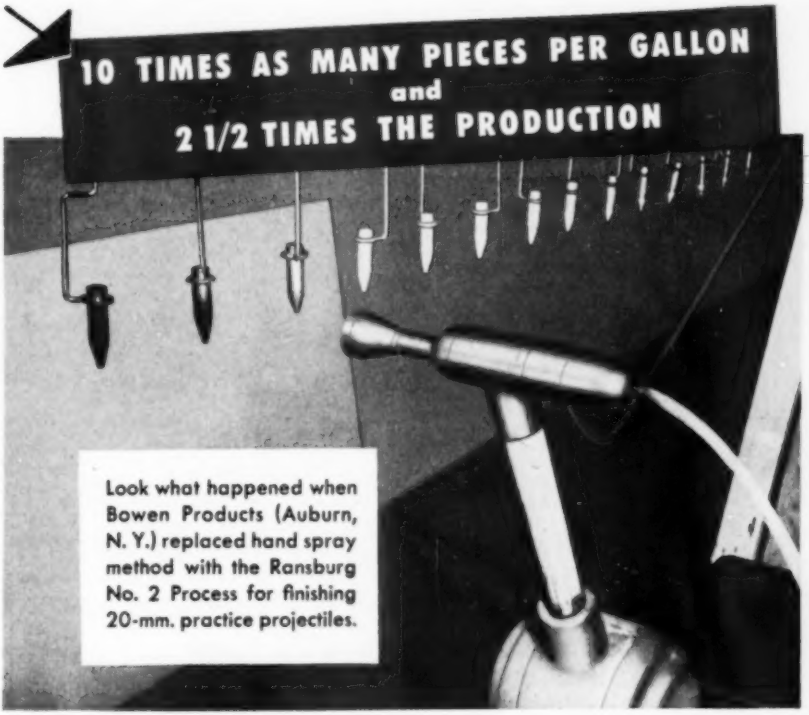
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SIC

Production Painting of Steel Drums . . .

BY ARTHUR OSWALD

General Foreman, Control and Methods
National Steel Container Corporation

FULLY automatic equipment has its place in the production painting of steel drums, that is, if all of the drums to be painted are the same size and type. We have two such lines, which I would estimate to be 95% automatic. Once adjustments are made, and the system is synchronized, operations proceed with measured regularity unless interrupted by an occasional machanical failure.

But these are not our real "workhorse" lines. The line that takes the real load is quite flexible. Size and type of drums can be changed as often as desired; also colors and arrangement of colors. That is to say, a center stripe of contrasting color, or two outside stripes of contrasting color may be applied. It is also possible to paint drum ends a different color from the body of the drum.

Drums may be cleaned and rustproofed by sending them through a 5-stage washer or, if this is not required, the power washer may be by-passed and drums sent through a shot blast for cleaning and etching the metal surfaces for paint. Of course the line is fully conveyorized, and does have some mechanical features. However, it is essentially operator controlled which, considering the type of production, eliminates devious adjustments in order to keep the line functioning efficiently.

Drum Surfaces Are Cleaned And Rust-Proofed

Production on this line at present requires that the drums be rustproofed. After fabrication, drums are pressure tested under water for leaks, and are then placed on a horizontal gravity conveyor to travel to the power washer. Inside the washer the horizontal conveyor is power driven, and in each of five stages, the drum is mechanically revolved so that all of the various solutions and rinses, which are sprayed from four sides of the washer at 30-lbs. pressure, will contact the entire surface of drums.

In the first stage an alkali cleaner and emulsion are sprayed at 160° F., followed by a hot-water rinse at 160° F. In the third stage a rustproofing solution is applied at

160° F., followed by a cold water rinse. In the fifth stage a mild chromic acid solution (at 140° F.) is sprayed on to complete the cleaning and surface preparation for the application of paint. The power driven conveyor carries the drums through an indirect gas-fired oven to dry for two minutes at 350° F.

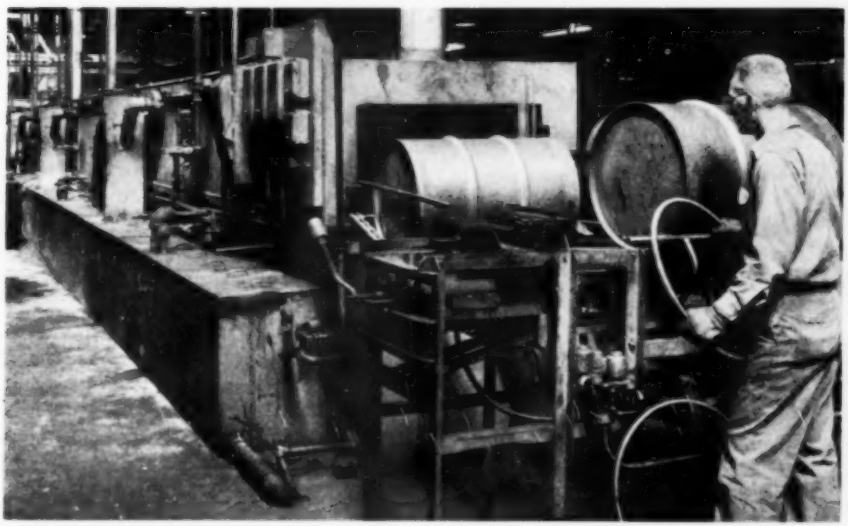
Chime is Spray Painted Automatically

Drums cool as they travel on the gravity conveyor to the spray booth. Just outside this both, the conveyor has a treadle operated airbrake so the operator may stop approaching drums, if necessary, until the drum being sprayed is out of the booth. This means of momentarily holding back the drums is one of the features which eliminates synchronizing the entire system, and assures steady production.

In the spray booth the steel drum is mechanically revolved as two fixed spray guns apply paint to the chime. These guns are controlled to operate only when a drum is revolving in the booth. Proceeding from this booth, the drum enters a machine which mechanically applies the chime bands.

Outside Surfaces of Drums Sprayed Manually

Then drums again travel on the gravity conveyor to the main spray booth. At this point the conveyor has an air-operated brake by which, if it becomes necessary, one of the hand spray operators may hold back approaching drums. This brake is rarely used; however it is available in case it is needed. In the spray booth, two operators, one stationed on each side of the conveyor, spray the entire outside



The 5-stage power washer and rust-proofing setup. Photo courtesy of Parker Rust Proof Co.

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BEDFORD, OHIO
Phone: BEdford 2-3800

surface of the drum as it is mechanically revolved.

At present we are using an olive drab synthetic enamel at a viscosity of 22 seconds, 78° F., as measured in a No. 4 Ford cup, with atomizing pressure of 65-lbs., and fluid pressure of 18-lbs. Here again the use of operators in the spray booth promotes flexibility, and permits quick and frequent changes in color combinations on the drums.

Vertical Bake Oven Has Many Advantages

Leaving the spray booth, drums, still in a horizontal position, are immediately picked up by a cradle having four points of contact to be carried aloft, vertically, into an indirect gas-fired convection oven in which the air is recirculated. The finish is baked for ten minutes at 300° F. The oven cycle is really 12 minutes, allowing one minute to approach the heat, which provides sufficient flash time, and one minute to descend. The cradle with four points of contact is designed to cover a minimum of drum area so as not to mar the finish. The vertical oven, with elevator type conveyor, occupies less plant space, eliminates the use of air locks to prevent heat loss and promotes more comfortable working conditions during the hot summer months.

As the drums reach floor level, a manually controlled device up-ends them from a horizontal position, in which they have remained throughout the entire system from the power washer, to a vertical position as they travel on a horizontal power driven conveyor for inspection and delivery into the freight car.

Florida test shows Unichrome Clear Enamel

offers longer lasting protection to bright finishes

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Here's a case history that illustrates the exceptional protection that can be obtained for bright finishes with Unichrome Clear Enamels.

As many as 70 coatings were being tested by a well known company. Most were baking types. Unichrome Coating A-140 was one of the few air-dry coatings. It was applied to a thickness of 0.4 mil, as against 0.8 for the others. Yet despite this, it was the coating that stood up best by far in the entire test group.

When applied to today's chromium or bright zinc conversion coatings, Unichrome Clear Enamels assure extra durability. Also supplied with lightfast color concentrates, these enamels permit you to simulate gold, copper or brass colors on chromium, bright zinc or stainless.

Among the many Unichrome Organic Coatings developed for both protection and eye-appeal, there's probably one to help *you* with your specific problem. Write or phone the nearest United Chromium office.

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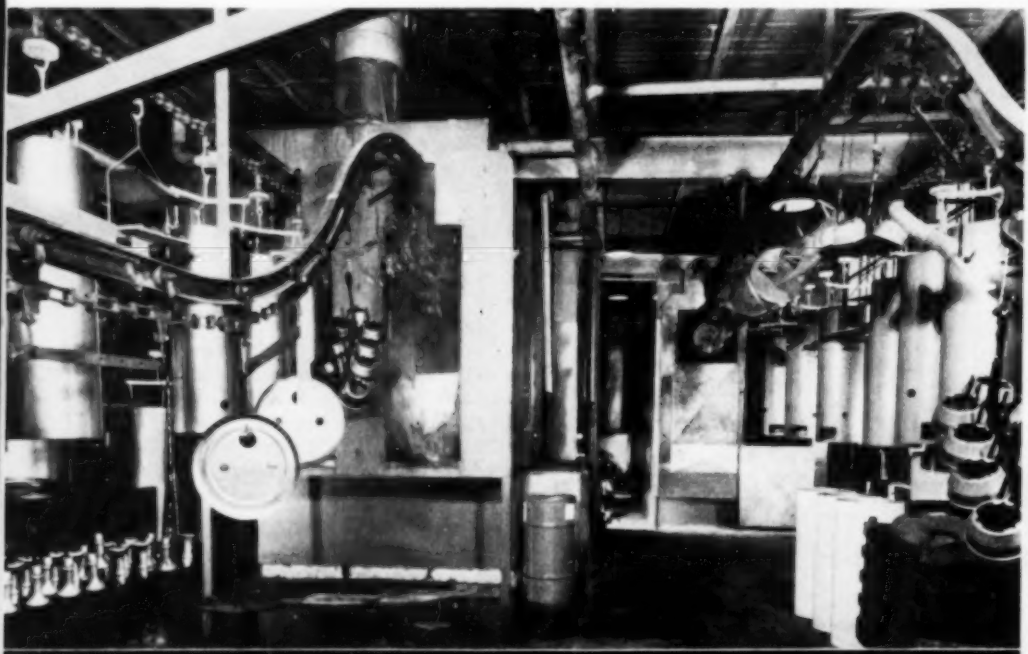
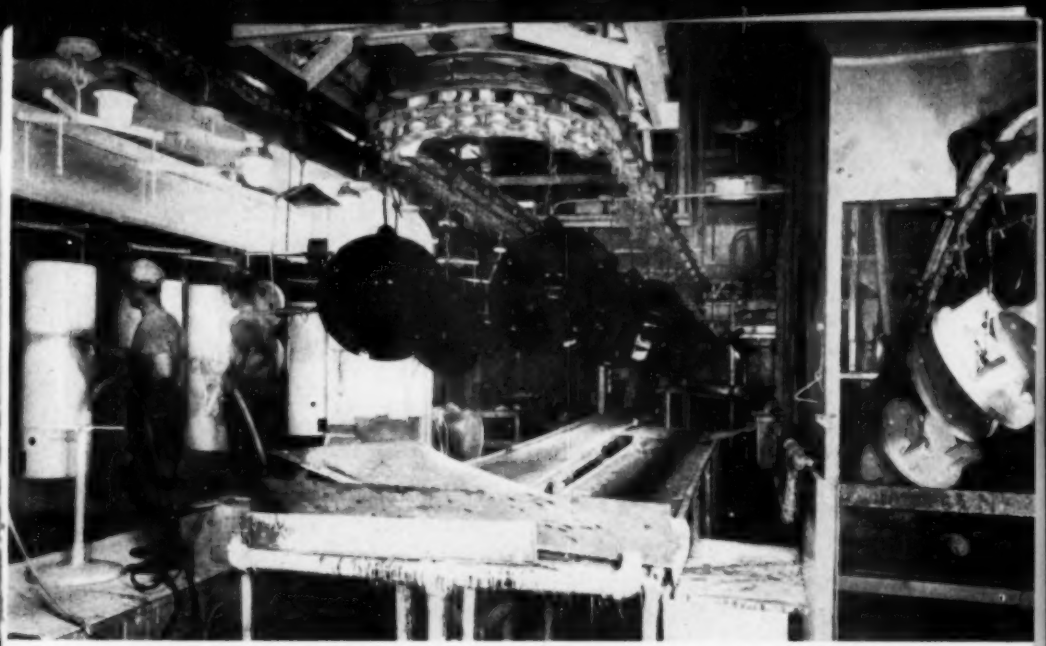
Dip Coating and Spraying in Compact Finishing Set up

TOO MUCH emphasis cannot be placed on the layout of a finishing room and the equipment placed therein. Layout—the effective positioning of operational stations in their proper sequence along a production line—is the beginning of your finishing efficiency. This fact was in the minds of engineers who planned our present finishing room.

At this plant we manufacture Hoffman automatic water heaters, gasoline blow torches, fire pots and Monarch brand builders' hardware. The jackets of our water heaters, the builders' hardware and the blow torch tanks are spray painted.



At left two loaded conveyors are entering the power washing machine; in background both conveyors make a U-turn, and at right they are leaving dry-off oven. One carries small parts to the dip tank; the other delivers jackets for water heaters to the spray booths.



In center foreground you see how the overhead conveyor doubles back over drain boards to allow paint to drain from parts dipped in tank at right . . . . before entering oven. At left men are spraying jackets for modern water heaters, these being hung to another conveyor.

Water heater bases, concealed items and fire pots are dip coated.

All ferrous metal parts must go through the metal washer for cleaning and surface preparation. We do all of our surface preparation work and product painting in a space about 20-ft. wide by 120-ft. long. The setup is conveyorized and all finishes are baked.

Our equipment includes two heavy-duty overhead monorail conveyors, with hangers spaced on 24-in. centers. One conveyor serves the spray painting setup and the other takes care of dip coating operations. Both conveyors are driven through variable speed drives at 40-in. per minute. The dip coating conveyor has a U-dip immediately over the tank for automatic dipping of parts as they move along by power.

A 3-stage power washer is used for cleaning and preparing the ferrous metal surfaces for the protective and decorative coat of paint. Connected to the exit end of the washer is an indirect gas-fired dry-off oven.

Paint in the 60-gallon dip tank is continually circulated to prevent any settling of pigment and to keep

BY C. G. MOREFIELD

Plant Superintendent, Clayton & Lambert Mfg. Co.

the material uniform in mixture and viscosity. A power pump withdraws paint from the bottom of the tank, forces it through a filter and returns it through piping to nozzles spaced across the width of the tank, just below the surface level of the material at the conveyor exit end of the tank. The dip tank has a metal hood with a stack and exhaust fan to remove solvent fumes. It is also protected by an approved CO^2 fire extinguishing system.

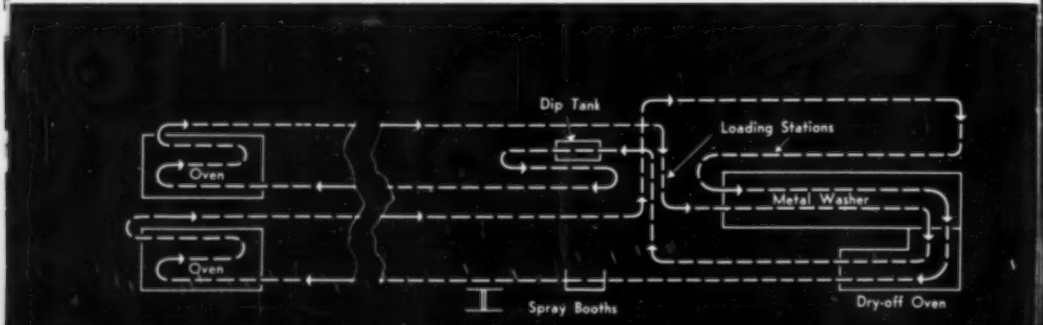
In the accompanying drawing you will notice that some space is saved by having the conveyor double back twice after it leaves the dip tank, so that plenty of time is allowed for excess paint to drain off the parts before they enter the bake oven. If this double return conveyor were straightened out in a continuous line, the finishing room would have to be extended 60-ft.

Three water-curtain spray booths take care of all spray painting requirements. Jackets for automatic water heaters are coated in the 2-man spray booth, while blow torch tanks and builders' hardware are painted in two single booths. Paint that produces the decorative and protective white coating on the jackets of our automatic water heaters is sprayed hot; it is heated to 140° F. as it is pumped from 60-gal. tanks through circulating-type paint heaters. We have two paint heaters.

For baking the finish coating, we have two indirect gas-fired convection ovens in which air is recirculated. We have a make-up air system for filtering and preheating all air that enters these ovens. All spray finished parts are baked in a floor level oven which has air locks at the entrance and exit to prevent loss of heat. All dipped parts are baked in an elevated A-type oven.

The two conveyors, power washer, dry-off oven, all spray booths, paint-circulating pump on dip tank, both bake ovens and the entire exhaust system are controlled from two centrally located control panels. For emergency use and convenience, both conveyors may be stopped and started by auxiliary push button controls located strategically along both lines. [*Continued on page 32*]

Here are two conveyor lines—one for dip coating and one for spray painting—which run along side by side as they carry work through the metal washer and dry-off oven. Where they cross each other the cross-over is at different levels to avoid any possible interference.



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Ferrous Metal Parts Pass Through Power Washer

Both the spray painting and dip coating conveyors pass through the 3-stage power washer where all ferrous metal parts are sprayed with a phosphoric acid cleaner which is heated to 175° F. Next comes a cold water rinse. In the third stage a mild chromic acid solution, heated to 125° F., is applied. Then for eight minutes, the treated parts travel through a dry-off oven in which a emperature of 300° F. is maintained.

Water Heater Jackets Are Spray Painted

Upon leaving the dry-off oven, the jackets for automatic water heaters cool as they travel to the 2-man spray booth. Here a double wet coat of white, alkyd-resin-base synthetic enamel is sprayed on the jackets. This enamel has a viscosity of 42 seconds at 78° F., as measured in a No. 2 Zahn cup.

Heat in the circulating-type paint heaters is maintained at 140° F.; this produces an applicating viscosity of about 27 seconds. Leaving this spray booth, the jackets travel for about 12 minutes to provide adequate flash time before they enter the oven where the finish is baked for 22 minutes at 310° F.

Non-Ferrous Metal Parts Get Clear Protective Coat

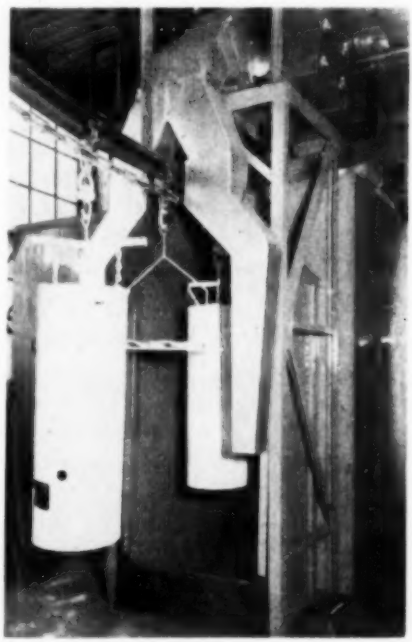
Blow torch tanks and builders' hardware are delivered to the other two spray booths by castered trucks. The blow torch tanks are sprayed with a protective coat of clear synthetic material and suspended on the water heater jacket line to go through the oven. Likewise, the builders' hardware items are coated with either a protective clear coat or, in some cases, with a black fine-pattern wrinkle enamel.

All finishing materials used in our spray painting are formulated to cure properly at 310° F. in 22 minutes. On all sprayed items we obtain a dry film of 1.8 mils.

Some Parts Are Dip Coated

Automatic water heater bases, concealed items and parts for fire pots also go through the power washer and dry-off oven. Then they are moved to the dip tank where they receive a coat of black finish.

(Continued on page 36)



White painted parts entering baking oven.

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Guide to industrial uses of Sundstrand Air Sanders

How to save time and money on maintenance, production

See how leading manufacturers use *Straight-Line Action* Sundstrand Air Sanders for all types of finishing operations on wood, metal, or plastics. Find out how you can duplicate hand sanding with this pioneer air sander which moves the pads back and forth instead of in a circle . . . leaves no swirls, no scratches, no pressure marks. Learn how you can use faster-cutting, coarser grit paper to reduce sanding time . . . how one machine sands wet or dry . . . on flat or curved surfaces . . . even along side moldings and in tight corners. Here are just a few of the uses pictured:

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- **Sanding plastics**
- **Wet sanding base coat on wallboard**
- **De-burring rivet holes on aircraft**
- **Polishing dies**
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- **Sanding and rubbing fine furniture**

Act now! Contact your local supplier or write for Bulletin IF-10.

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Why settle for just "any finish" when a Polychrome Metallic Finish costs no more?

ALCOA

ALBRON PIGMENTS
for Production Finishes

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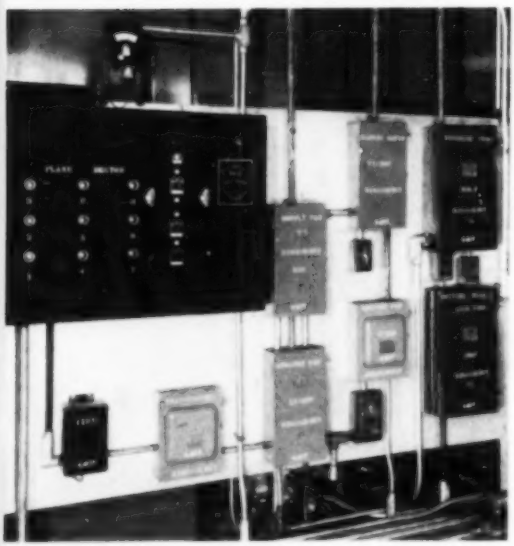
These parts pass over drip pans and travel over a drain area for 20 minutes before they enter the bake oven where the finish is baked for 22 minutes at 400° F. (the black is baked at a higher heat).

On the dip coating line there is only one exception to what has just been outlined. Some parts for automatic water heaters receive a coat of gray synthetic enamel. These parts are segregated and run throught consecutively. A portable dip tank is placed just ahead of the tank of black coating material. An operator removes these parts, hand dips them, and hangs them on the dip coating conveyor to drain before they enter the oven. The gray finish is baked for 22 minutes at 310° F. The reduction in baking heat is made to prevent any slight discoloration of the gray.

One of the central control panels.



United Chromium Adds Another New England Man

Jack S. Brundage has joined the New England sales and service staff of the Organic Coatings Division of United Chromium, Inc. Mr. Brundage, a member of the New Haven branch of the American Electroplaters' Society, will sell and service the complete line of Unichrome Lacquers, Enamels, and Synthetics, with particular emphasis being placed on *clear coatings for bright metal finishes.*

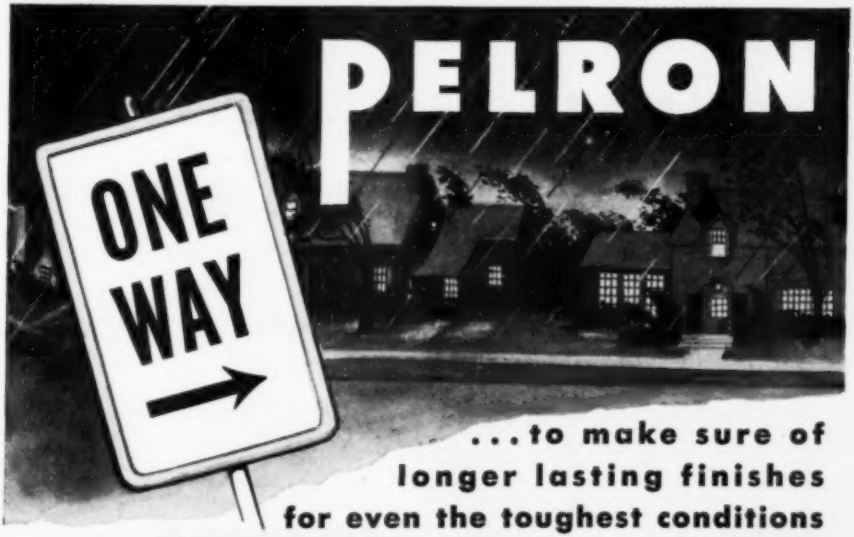
A lifelong resident of Stamford, Connecticut, Mr. Brundage was an employee of another manufacturer of finishes from 1936 until June of 1952. He rose from laboratory assistant to coatings formulator and chemist in 1939. From April 1941 to March 1946 he served in the U. S. Army, rising from the rank of private to captain in the Field Artillery.

Carney Honored by M.D. Co. for 25 Years Service

Elvin P. Carney, Chief Control Chemist of Metals Disintegrating Co., Inc., Elizabeth, N. J., manufacturer of metal pigments, metal powders and metal abrasives, was the guest at a dinner held in his honor, celebrating his 25 years of service with the company.

The affair, held on Wednesday evening, September 10, was a gala one, attended by over 50 of Mr. Carney's associates and the executives of the company. Highlight of the evening was the presentation by Mr. H. E. Hall, president of the company, of a gold watch, suitably inscribed, which was given to Carney.

In commenting on the occasion, Mr. Hall recalled Mr. Carney's quiet yet efficient manner of carrying out the assignments of his department, of the high regard in which Mr. Carney is held by many customers and others in the industry, for his untiring efforts in obtaining the highest degree of accuracy in his product analyses.



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use PELRON Phoscote 299

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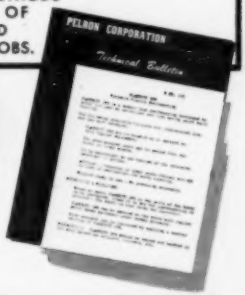

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INDUSTRIAL OILS AND CHEMICALS
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MASS PRODUCTION COATING OF CONTINUOUS, COILED METAL STRIPS

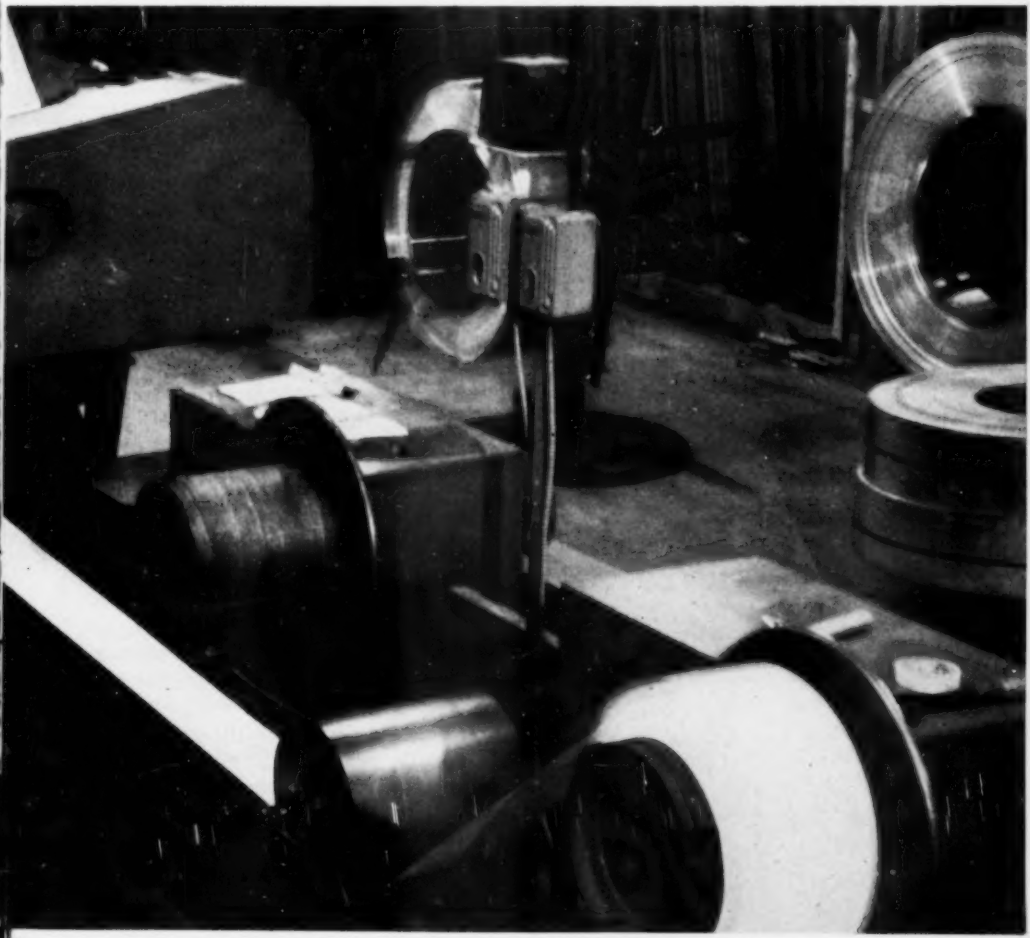
BY O. F. ROEHLER, President of KoolVent

The accumulator, operation of which allows metal strip to stop to be spliced at ends without interrupting the continuous travel of metal strip to the processing equipment.

OUR PRODUCTION setup for cleaning, coating and baking thin ribbons of metal that unwind and wind up again on reels was put in primarily to paint aluminum strip which we use to make Kool-Vent awnings. However, we also do custom coating of aluminum, steel and zinc strip in all colors, and in all types of finishing. For instance, some of the zinc strip is coated both sides with an electro-conductive material. This is applied and baked in one operation.

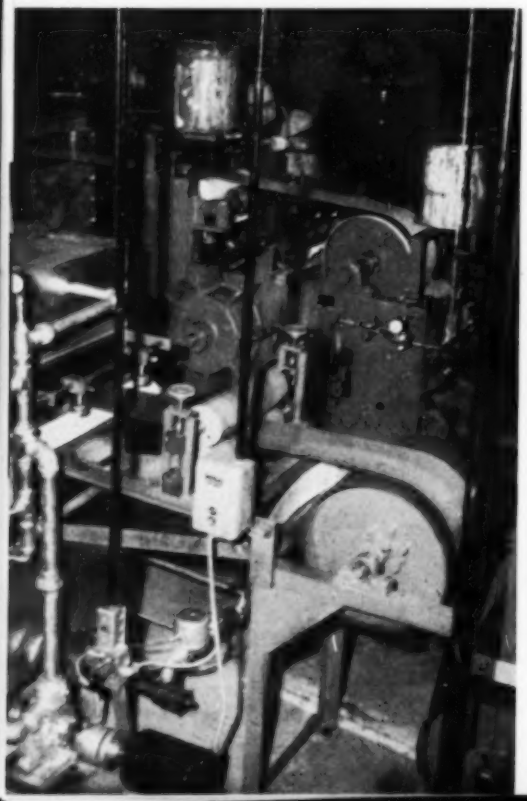
The equipment occupies a space about 12-ft. wide by 95-ft. long, and is designed to coat thin metal strip (.02 to .05-in. thick) in any widths

Close-up of oven exit (extreme left), chromium-plated steel water-cooled roller, drive unit and recoilers. Coil in right background is feeding off unwinder reel. A full coil has not been placed on the other unwinder reel, as yet. Photograph, courtesy of Gasway Corp.



from 2-in. wide up to 12-in. wide. This continuous metal strip may be coated on one side only, or on both sides with the same color, or with one color on one side and another color on the other side, in one trip through the setup. All operations —from unwinding the bare metal strip to recoiling the coated strip— are mechanical; only two men operate the entire system.

In the foreground at left you see exit of the metal washer; beyond this exit the ribbon of cleaned metal passes between squeegee rollers, then over one roller and down, around another roller and up through the drying tower at right (not in picture). In background, is the roller coater with entrance to oven at far left. Photograph, courtesy of Gasway Corporation.



Formulation of Paint Determines Speed

A variable speed drive permits the strip to travel up to 50-ft. per minute. At present we operate at a speed of 42-ft. per minute, using a synthetic enamel at a viscosity of 21 seconds at 78° F., as measured with a No. 4 Zahn cup. The wet film thickness is 2.2 mils which produces slightly over one mil of coatting thickness on each side of the metal after baking.

Formulation of the finishing material is the determining factor insofar as speed is concerned, for the speed of the strip controls both flow-out and baking time.

Two Unwinding Reels; Two Recoilers

For this continuous coating it is necessary to have two unwinding reels and two recoilers. The unwinding reels are mounted on a pivoting frame so that as one reel is emptied, a full reel can be quickly swung into unwinding position. I will describe the location of the recoilers later. In front of the unwinding reels we have a stapling machine which is used to stitch or staple the lapped ends of the metal strip, thereby making it continuous.

Accumulator Makes Continuous Operation Possible

Just beyond the stapler strip we have what is called an "accumulator"; this is one of the most important devices in the entire system. The purpose of the accumulator is to permit the metal strip to continue going through the entire system at regular speed while the operator splices and staples the

MEET
The *Man* Behind The Man Behind <u>Your</u> Spray-Gun

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Your Egyptian Industrial Finishes Specialist can keep you constantly informed of the developments of new finishing techniques and how you can benefit by them. He can tell you why it would be more advantageous to coat your product by the dip, spray, tumble or roller coat application method. He knows and can tell you the required specifications for finishing any government product.

Put this highly specialized knowledge to work for you!

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BOX 444, NEWARK 1, NEW JERSEY

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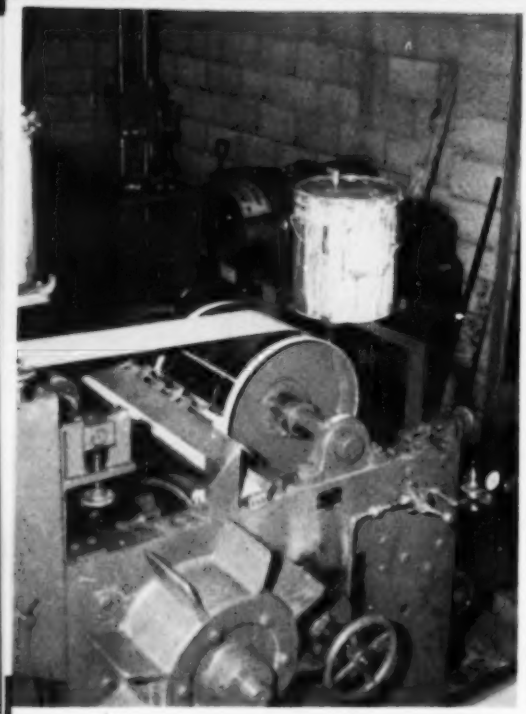


Close-up of the roller coater. The finned circular housing, which appears in lower foreground, covers a roller that has an air operated brake to provide tension for strip of metal passing through oven. Photograph, courtesy of Gasway Corporation.

ends of two strips together when coils are changed—that is, when one coil is entirely unwound and a new full coil is started. This is done by passing the continuous metal strip over a series of four rollers at the top, and three rollers at the bottom. This reserve supply of metal strip (in the accumulator) continues feeding out through the system at regular speed while the strip about to enter the accumulator is stopped for an interval to allow for splicing the ends.

The three rollers at the bottom of the accumulator are mounted on a special elevator, which slowly rises as the entering strip is stopped by an air brake while the ends of the metal strips are being joined together by staples. The interval of time required for the elevator rollers to travel to the top of the accumulator is 1½ minutes; this allows more than enough time for a workman to staple the ends of the metal strips together.

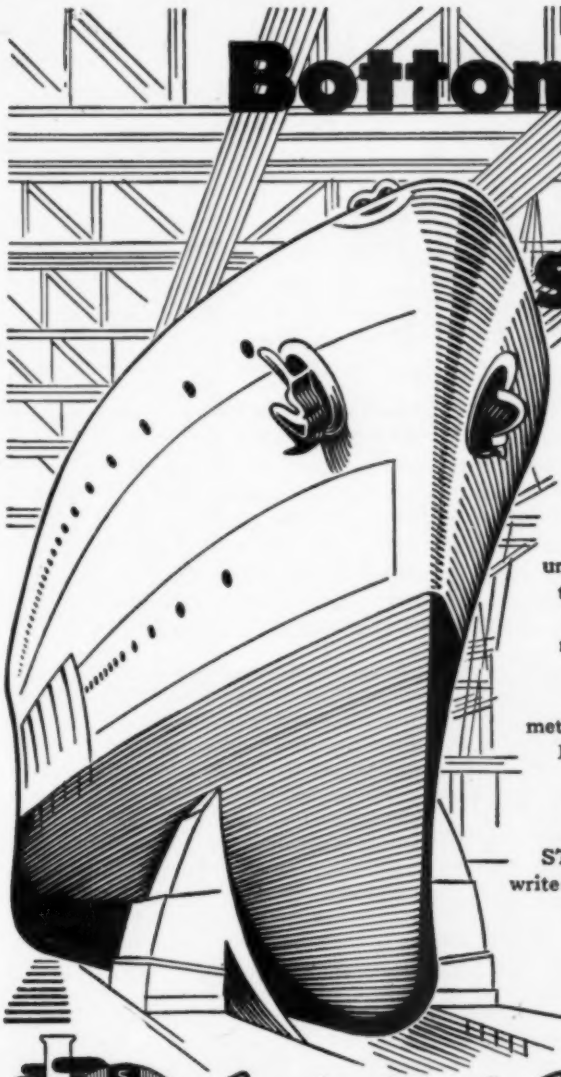
The accumulator has a special automatic switch which will stop the entire system if the elevator rollers go clear to the top before the brake is released; otherwise the strip would be torn. When the holding brake is released the elevator rollers of the accumulator descend to their normal operating position, unwinding the new incoming strip at a faster rate of speed to catch up. Meanwhile, the speed of the strip traveling through the balance of the system (beyond the accumulator) continues constant.

Five-Stage Metal Washer Has Squeegee Rollers

After leaving the accumlator the continuous metal strip passes through a 5-stage washer where solutions and rinses are sprayed over both top and bottom surfaces of the strip at 25-lbs. pressure. After each stage of operation in the washing machine the metal strip passes between tight fitting rubber rollers which squeegee the particular solution or rinse off both top and bottom surfaces of the metal so that there is no carry over of any cleaning or treating solution or rinse. Here is what takes place in the metal washer:

1) Mild acid solution with emulsion heated to 145° F. [*To page 44*]

Bottoms up! for Stantite



STANTITE Spraying Primer has passed the tough test of a ship's bottom with colors flying. That's why many ship owners are undercoating with **STANTITE** to minimize corrosion and rust creep. And on land, wherever metal is coated, rust-inhibiting **STANTITE** also provides excellent adhesion to any metal surface, with most top coats. Ideal under air-dried or baked finishes, it dries rapidly . . . is unimpaired by any baking schedule. Find out *now* what **STANTITE** can do for you . . . write today: Stanley Chemical Co., 41 Berlin St., East Berlin, Conn.

STANLEY

Industrial Coatings

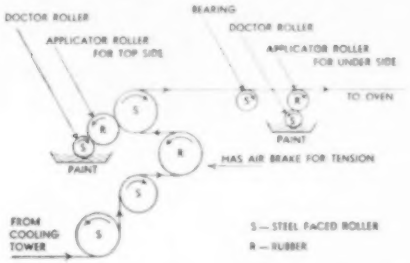
STANLEY CHEMICAL

LACQUERS SYNTHETICS JAPANS ENAMELS

2) Cold water rinse.
3) Phosphatizing solution, 120° F.
4) Cold water rinse.
5) Mild chromic acid solution at temperature of 120° F.

Strip is Reversed Dried and Cooled

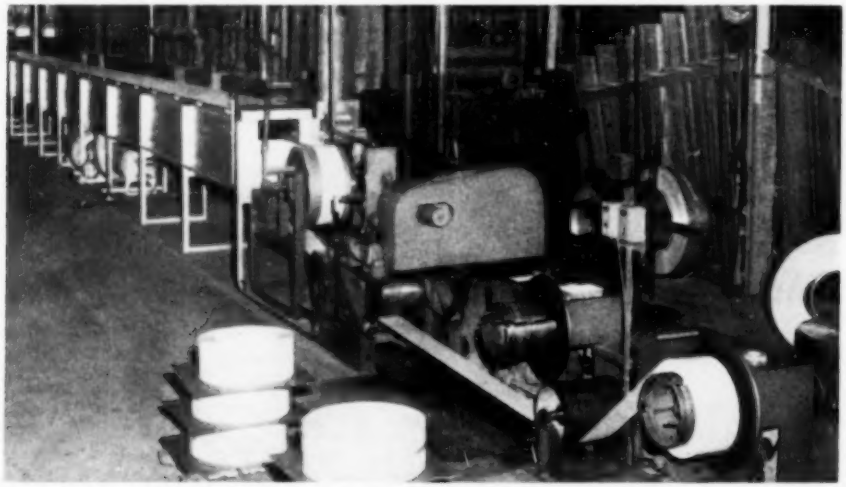
After leaving the metal washer the strip enters a vertical drying tower wherein the heat is kept at 120° F. In this tower as paint on the strip dries, the strip is given a half turn by passing it over a series of rollers. As the strip leaves the top of the drying tower it travels at a right angle in relation to its original direction of travel, and enters the top of the cooling tower. Here it passes over a series of rollers which, as it cools, give it another half turn so that what was the top surface at the start is now the bottom surface;



and the strip has made a vertical U-turn to travel back through the roller coater and oven. Fans move air up through the cooling tower.

One or Two Coats Put on and Baked in One Operation

As the continuous metal strip leaves the cooling tower it passes through the roller coater where either one or both sides are coated. How this is accomplished may best be shown and explained in the accompanying drawing. [*To p. 46*]



In foreground, at lower right, the painted ribbon of metal is winding up on a reel after coming through oven at left. In background, right to left, are coils of metal, unwinder reels, stapler, accumulator, metal washer, etc. Photograph, courtesy of Gasway Corporation.

Skin Specialist for Office Machines!

Randolph MAKER OF FINE

OFFICE EQUIPMENT FINISHES

Make no mistake about it—the finish you choose for your office equipment is as important to it as smooth, attractive, unblemished skin to a human being. Whether you manufacture, refinish or recondition office equipment, consider Randolph's highly specialized research and resources as a mighty ally in supplying the finish your product needs.

What is your product? Typewriters? Adding machines? Metal office furniture, filing cabinets, staplers, letter openers? From an amazing variety of finishes—Randolac, Metallic Randolac, Randolph Colored Lacquers, Baking S.G. Enamels, Texture Enamels—Wrinkle, Hammered Metal Finishes and Baking Primers—you can achieve a surface coating that will serve your product better at less cost!

More than 60% of Randolph's output is specifically formulated for individual customers. Tell us what you want—and be sure to get a finish that will show and keep your product at its best!

Write for our brochure "I" on office equipment finishes. We will be glad to send it to you—free. Consult us if you have any finishing problems.

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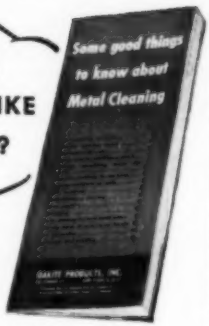

Listed below are some jobs discussed in Oakite's 44-page illustrated booklet on Metal Cleaning. Let us help you do them with better results, greater economy.

OAKITE PRODUCTS, INC.
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Tell me about Oakite methods and materials for the following jobs:

- ☐ Tank cleaning
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- ☐ Pre-paint treatment
- ☐ Paint stripping
- ☐ Steam-detergent cleaning
- ☐ Barrel cleaning
- ☐ Rust prevention
- ☐ Pickling
- ☐ Burnishing
- ☐ Send me a FREE copy of *"Some good things to know about Metal Cleaning."*

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COMPANY_____

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A flow-out time of 30 seconds elapses before the coated strip enters a 60-ft. indirect gas-fired convection oven. For the first 20-ft. inside the oven, the finish is baked at 200° F.; for the next 20-ft., at 230° F., and for the remaining 20-ft., at 490° F.

The oven has two burner units, the first one being used for the lower heat, the difference between 200° and 230° being regulated by dampers. The second unit produces the 490° heat. In this installation 65% of the air is recirculated through the oven. Baking time is 1½ minutes.

As the coated strip leaves the oven it passes over a chromium-plated water-cooled roller which safely reduces the temperature of the metal before it is wound onto reels again. As one coil is completed, the lapped ends are cut and the strip end is attached to the second recoiler so that there is no break in the continuous operation.

Metal-Strip is Suspended Throughout System

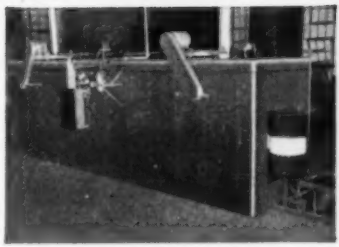
The drive unit is located between the cooling roller and the recoilers. The secret of success in this system can be described in one word—tension. The metal strip is in rigid suspension throughout the entire system, except where it contacts a roller. To produce this tension, rubber-faced steel rollers, controlled by air brakes, are used. Because of this tension it is possible to successfullly coat and bake both sides of the strip, because in the 60-ft. long convection oven the metal strip is rigidly suspended in mid air.

HAVE YOU A *Tough* OVEN PROBLEM?

LET US HELP YOU SOLVE IT

If you have a baking or drying problem, our engineering staff, with a combined oven engineering experience of 150 years, will be glad to cooperate with you in designing an oven to fit your particular job. Write and tell us your requirements.

QUICK SERVICE



Unload end of refinishing oven for steel drums

Write for Bulletin 951

MICHIGAN OVEN COMPANY

417 Brainard St. Detroit 1, Mich.

During down time, such as on Sundays and holidays, a "night strip" which consists of any width of reject metal strip is stapled to the end of the last coil and is run through the entire system where it remains until work is started again. The night strip passes through the roller coater, but the applicator rolls are adjusted so that no paint is applied to it.

R. P. Bell Advanced by P.P.G. Co.

Richard P. Bell has been made assistant general paint manager for Pittsburgh Plate Glass Company's merchandising division.

Mr. Bell joined the firm's merchandising division at Baltimore in 1938. During the past six years, he has served as paint sales manager at the Pittsburgh, Penna. warehouse.

Mr. Bell is president of the Pittsburgh Chapter, Producers' Council and treasurer of the Pittsburgh Paint, Varnish & Lacquer Association.

Sherwin-Williams Industrial Finish Men Go to School

Sixty industrial finishes representatives of The Sherwin-Williams Co. went back to school in Setpember, attending a special "new developments" course at the company's Chicago laboratories. The men, drawn from all parts of the country, were given intensive practical training on the latest finishes and finishing techniques Sherwin-Williams has developed.

Laboratory staff members, headed by H. E. Spitzer, laboratory director, conducted the metings. During the two-week session (September 15 through September 27) the representatives were given a close-up view of typical problems faced by industrial finish users, and they learned practical solutions to those problems. Also included in the curriculum were seminars devoted to new trends in industrial finish requirements, and laboratory meetings in which the men prepared and applied finishes to various types of surfaces.

The service-to-customers field was also discussed during the course. L. M. Muse of the Sherwin-Williams General Industrial Division in Cleveland conducted these meetings. The entire program, according to Muse, was aimed at equipping the representatives with the latest information in the rapidly expanding industrial finishing field.

THIS TEAM ON YOUR SIDE

Here's a team that's ready to "play ball" with you. It's the famous team formed by the Solvents & Chemicals Group .. America's leading distributors of Solvents and Chemicals. Whether you order by drum, tank wagon, transport or tank car, each Group member stands ready to serve you. Why not investigate the many advantages your nearby Group member offers?

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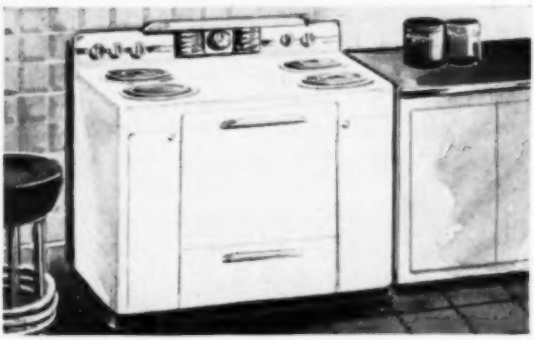
SUPPLIERS "ON THE BALL"

TEAMWORK "PAYS OFF" FOR S-C CUSTOMERS



Appliance Makers Use Tri-chlorethylene for Metal Cleaning from Cincinnati's Amsco Solvents.

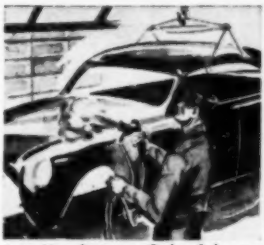
"Forward passing" huge transports of naphtha and other solvents is **S**tandard **O**perating **P**rocedure for members of the Solvents & Chemicals Group. This unusual "team" of 11 solvent and chemical distributing companies meets local shortages by drawing on supplies maintained by other Group members throughout the Midwest and large sections of the South. Thus, if a customer requires an unusual amount of a scarce product, the Solvents & Chemicals Group frequently can fill the order within 24 hours.

WHERE SERVICE IS MORE THAN A WORD:

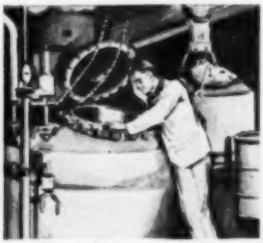
Filling difficult orders quickly is just part of the service that the Solvents & Chemicals Group performs for industry. Perhaps, that is why many of the leading firms in their field specify products distributed by Group members. In the paint field, metal-working trade, graphic arts industry and chemical compounders market, each group member offers personalized attention to both large and small accounts. Whether it's a solvent for coatings, or for ink . . or a solvent for cleaning, Group members are ready to serve you.

REPRESENT LEADING FIRMS

Because of their outstanding service record, some of America's leading names in chemicals have chosen the Group to market their products. The strategic location of various Group Members, plus their ability to warehouse and to supply so many segments of industry, makes them logical choices to introduce new products as well as handle more familiar necessities.



Auto Manufacturers Order Solvents and Chemicals from Detroit's Western Solvents.



Raw Materials Flow to Leading Coating Manufacturers from Cleveland's Ohio Solvents.

From Buffalo Solvents Go Waxes to Make Business Forms and Inked Ribbons.

Grand Rapids Furniture Makers Call on Wolverine Solvents for Solvents and Chemicals.

THE RIGHT PRODUCT AT THE RIGHT TIME

The wide variety of products handled helps Group members to suggest a solvent or chemical best fitted to meet specific needs of customers. Thus, members have no "axe to grind" and can impartially suggest the best product available. Because of this impartial attitude, many customers refer first to the Solvents & Chemicals Group when problems arise.

HOW THE GROUP CAN HELP SOLVE YOUR PROBLEM

If you purchase solvents or chemicals, the members of the Solvents and Chemicals Group can, quite probably, offer you a better source of supply saving you time, work and money. Inquiries from prospective users are invited. Just phone or write your nearest Group member for complete infomation about the Group and the products it handles.

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Buffalo Solvents is the team member from Buffalo. Texas Solvents is the name to look for in Houston. And in New Orleans it's SOUTHERN SOLVENTS, of course. Every year, Southern Solvents supplies more and more of the New Orleans area with leading-name solvents and chemicals. Whether you make or use paints or clean metals whether you wax or print paper whatever you do that requires solvents and chemicals, you can be sure of better service when you call on SOUTHERN SOLVENTS.

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TELEPHONE: TEMPLE 4666

Painting Portable Landing Mats

A fast working and effective cleaning material is required on a conveyorized spray washing setup which is followed by rinsing, drying, dip painting and baking the protective coating.

PORTABLE landing mats, which can be laid almost any place in a short time, have come into wide use by the Army Engineers. In addition to providing convenient runways for fighter planes and bombers, these mats also serve well as roadbeds for trucks.

The mats are actually heavy gauge steel planks, 16½-in. wide and 10-ft. long. They lock together to provide a smooth, rugged apron. The mats are perforated so grass will grow up through them and act as camouflage. Two ribs running lengthwise through each mat provide plenty of support.

To protect them against hard wear and varied weather conditions these mats must be covered by a durable protective coating.

One manufacturer, who is turning out thousands of portable landing mats, has worked out a system for applying a uniform paint finish —even on the sharp sheared edges —with no sags or color variations. Important too, this manufacturer's finishing process does not slow up his over-all production schedule.

Cleaning, Rinsing, Painting, Baking Setup by Conveyor

Paint was especially developed for the job, as was the finishing setup, which is all conveyorized. A key phase of this painting work is the metal cleaning cycle, during which oil, grease, cutting compounds and all other foreign matter are flushed away, leaving all of the steel surfaces perfectly clean.

The mats are racked lengthwise, six abreast, with approximately 2-in. between them. They travel on a monorail conveyor through a two-stage washing machine which has two 1600-gallon tanks — one for cleaning and one for rinsing. The washer is heated by gas. Spray heads, located above and below the work, discharge a hot solution of cleaning compound — a specialized spray washing machine cleaner. Mats remain in this first or cleaning stage of the washer for one minute; then they are moved into the rinse or second stage, also of one minute duration.

After cleaning, rinsing and drying, but while still warm (about 110° F.), the mats are racked six to a hanger and lowered into a dip tank which contains the specially developed olive drab paint. From the dip tank, the paint-covered mats pass through a drainage area for slightly more than six minutes. From the drainage area, they move to the drying ovens where the paint is baked for 25 minutes at 325° F.

As is the case on most metal painting operations, the success of

Automatic Electric Spray-Bake Coating Machine

Pays For Itself In Regular Production Within 3 to 6 Months

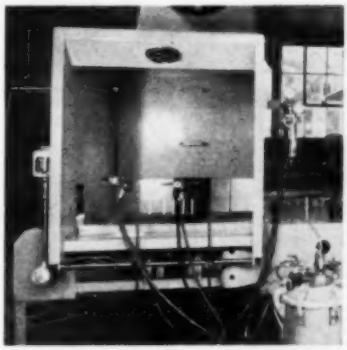
Here is a self-contained unit that cuts coating costs, boosts output and improves quality of finish. Many machines have been in satisfactory production operation for several years. List of prominent and satisfied users available on request.

It will accommodate pieces of from less than 1-in. diam. to over 12-in. diam., which require a high quality finish, such as shell noses, cartridges, weapon parts; also clocks, pens, pencils, door knobs, etc. Positioned on work holders, pieces are automatically sprayed, travel on through a drying chamber for solvent evaporation, and then into electrical strip-heated bake oven from which they emerge for a brief cooling period before being removed.

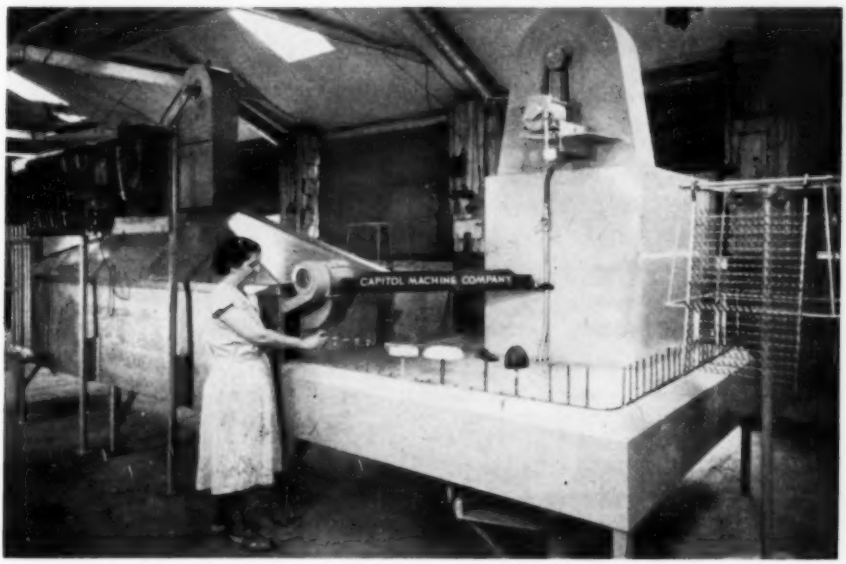
Recommended for speedy, high quality production, and exceptional savings in coating pieces of various sizes and shapes that are difficult to handle.

Let us make a test run of your own work samples—for time study and cost analysis—no obligation.

THE CAPITOL MACHINE CO.
DANBURY, CONN. **Tele. Danbury 3-2758**



View of booth showing automatic spray guns — lower view shows conveyor arrangement and drying and baking compartments.



YOUNG BROTHERS OVENS

solve your

BAKING AND DRYING

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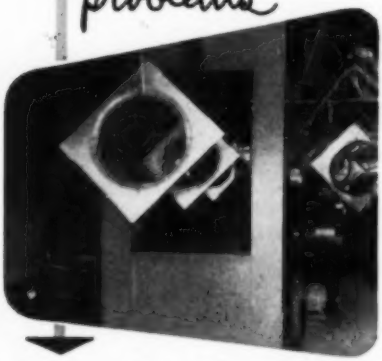


Continuous Conveyor Dry-Off Oven

Leading manufacturers throughout the U.S. use Young Brothers ovens because they provide better, faster baking and drying with savings in time and money. Standard and specially designed ovens engineered to meet your particular requirements for uniform results with ENAMELS, LACQUERS, JAPANS, VARNISHES and other finishes. Batch and conveyor types for any fuel. Write for Bulletin 2 today.

YOUNG BROTHERS CO.

1835 COLUMBUS ROAD

CLEVELAND 13, OHIO

YB Co

Estab. 1896

this particular one is, to a great extent, dependent upon proper cleaning, as well as a durable paint. Because painting had to be accomplished on a production line basis, a pressure spray washing machine was called for.

Cleaning Material Must Work Fast in Spray Washing

Cleaning metals in a pressure spray washing machine requires something special in the way of a detergent. The material must be designed to work under conditions that machine washing imposes.

Because, in a washing machine, soiled work is usually not in contact with the cleaning solution very long, the cleaner must go to work fast. Because machine washing usually occurs after fabricating, and prior to painting, the machine detergent must be one capable of thoroughly removing the heaviest soils. Another requirement of a detergent to be employed in machine washing is that it does not foam excessively.

A specialized washing machine cleaner having all of these requirements was used. It is used at solution concentrations ranging around ½ to 1-oz. or slightly more per gallon, and at temperatures of 160° to 180° F.—*From Oakite News Service, July-August 1952 issue.*

Spe-de-way Products Co. Now Has Chicago Warehouse

Spe-de-way Products Co. (wood bleaches and lacquers), Portland, Oregon, announces that it now carries a full line of materials in its new Chicago Warehouse at 2141 S. Throop St. (Telephone TAylor 9-2141). This Chicago location will enable the company to give better and quicker service to customers east of the Pacific and Mountain states.

Nail Points Support Spray Work

ARE YOU having trouble with fat edges around the base of your products, where they rest on a turntable in the spray booth? Or perhaps the base or bottom of your products tends to stick to the turntable after spray coating? This could happen if the piece is fairly heavy and if the surface area touching the turntable is large.

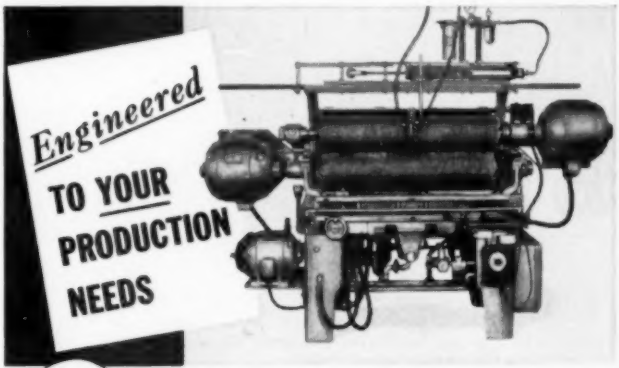
To solve either or both problems, take two to four wood blocks about 1½ to 2-in. thick and 12 to 16-in. square, and drive 20 penny nails all the way through the thickness of the blocks. To avoid splitting the wood and to speed up driving the nails, holes slightly smaller than the nails may be drilled through the wood first. The holes for nails may be ½-in. apart, more or less, depending upon what is to rest on these upturned points.

The wood blocks with their nail points upturned in suitable position to support the products being sprayed, are then placed on the turntable. The number of spiked blocks required will depend upon the size, shape and base area of the products being finished.

When overspray accumulates on these supports they may be cleaned at regular intervals by placing them in a stripper tank.

Air Processing Bulletin

Air Processing—what it means, how it is done, what it requires, what it should cost, etc.—is the subject of a 6-page bulletin published by J. O. Ross Engineering Corp., 444 Madison Ave., New York 22.



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Working closely with your engineers we will develop a custom machine designed for maximum surface finishing efficiency on your particular application. Totally enclosed, abrasion-proof hydraulic circuits assure uninterrupted production and vastly reduced maintenance costs.

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Specialized Machine Equipment For Glazing and Polishing Operations
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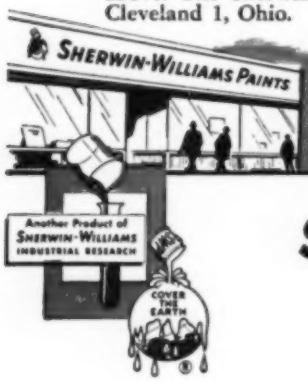
get these FAST FACTS about these two FAST-DRYING product finishes

Faced with the need for speeding up production . . . finishing . . . packing schedules?

Here's quick, complete information on two new ways to do it . . . either with lacquer or enamel . . . for either wood or metal application!

Opex® Industrial Lacquer and Fast-Dri Synthetic Enamel are two of a complete line of Sherwin-Williams quality finishes especially designed to meet production line requirements—and as close at hand to you as your local Sherwin-Williams Branch.

Check this handy local source for your industrial product finish needs. Consult your classified telephone directory for location of your nearest Branch—or write for copies of the brochures shown above. The Sherwin-Williams Co., General Industrial Division, Cleveland 1, Ohio.



Your "on-the-spot" source for PRODUCT FINISHES

SHERWIN-WILLIAMS
INDUSTRIAL FINISHES

HOW TO MAKE FRIENDS AND INFLUENCE PEOPLE

in favor of your quality-finished, quality products

You can make an attractive, quality finish on your products pay off even more! Provide an *added* sales plus . . . an *added* sales clincher . . . by finishing with Sherwin-Williams Custom Finishes *and identifying the finish* with the Sherwin-Williams name and trademark. Thus, you contribute the *added* sales appeal of the best-known name in finishes. No other symbol in the world says "This is a quality finish!" to so many people, so quickly, so emphatically.

Sherwin-Williams identification aids—tags, seals and decals—are available to users of Sherwin-Williams quality product finishes. They offer an excellent opportunity to further capitalize on the inherent advantages of these outstanding materials. **Tags may carry your own individualized message on the reverse side to support your own sales or service program.**

Ask your Sherwin-Williams Industrial Representative for details, or write The Sherwin-Williams Co., General Industrial Division, Cleveland 1, Ohio.

SHERWIN-WILLIAMS
INDUSTRIAL FINISHES

Compressed Air Pressure at Points of Use

IF YOU USE compressed air you should know or be able to find out what the pressure is at or close to the point of use; in other words at the spray gun, or rubbing machine, or any other tool being powered by compressed air.

Compressed air, as emphasized by its increased use, has proven itself among the foremost power media.

A quick check with a hypodermic needle-gage indicates the pressure received at point of use. Low pressure means lost production.

Maximum benefits are being obtained by those who keep a close vigilance over their air systems. Conversely, where reasonable maintenance is not conducted, a loss in production and dollars is certain.

One of the greatest production robbers is low pressure. It has been found that if the pressure at a pneumatic tool falls from 90-psi. to 70-psi., production output of that tool may drop as much as 35%. More specific is the case of air motors which are used extensively to power air tools and devices. Air motors offer more horsepower per unit weight than other comparable power sources.

Because compressed air systems in most plants utilize pressures between 90 and 110-psi., air motors are designed to operate within those working pressures. An air motor, built to operate at 90-psi., however, will lose 25% of its capacity if line losses in delivering air drop the pressure to 70-psi.

First inclination when air pressures drop may be to place the blame on insufficient compressor capacity. A check of the air distribution system, first, may save the cost of new compressor equipment.

One of the principal causes of low-air pressure are leaks in the distribution system. Checking the air distribution system for leaks is a relatively simple matter. Results have proved that the most likely location of small leaks are around valve stems, hose connection, unions, drains, blow guns, and lines leading to inoperative tools. Of course, the entire system should be checked, with particular attention to the above and to lines that are subjected to unusually rugged treatment. Inspections should be made monthly.

Plant maintenance departments have come up with many simple and rather unique ways to check leaks. Most frequently used are the lighted candle or the solution of soapy water which is brushed around suspected areas. One manufacturer puts essence of peppermint into the air system. Detection of the slightest leak is by odor. Regardless of what method is adopted,

Clear Metal Lacquers

Maximum Adhesion to

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when leaks are found, it is best to patch them immediately.

Some of the leaks may be very small, appearing trivial in themselves. But such leaks may be numerous and have a high accumulative effect. Actually, these leaks spell a definite and continuous dollar loss. This dollar and cents wastage more than justifies scheduled maintenance of air distribution systems.—*Comp. Air Institute.*

Schenectady Varnish Company Expands, With New Plant

Schenectady Varnish Co., Inc., well-known for nearly 50 years in the specialized field of industrial varnishes and synthetic resins, announces completion of a new plant in Rotterdam near Schenectady, N.Y. Designed for large scale production, with special attention to quality control, the new facilities will meet a need created by wide acceptance of the company's new resins, principally alkyds, maleics, phenolics and terpenes. This new plant features continuous processing of finished products from basic chemicals. For most efficient handling, raw materials, resins and varnishes are moved through various processes by gravity feed and gas pressure.

Only a few miles from the company's main plant, the new Rotterdam plant will take full advantage of the company's extensive development laboratories, which have designed many of its new features, permitting efficient large-scale chemical reactions without sacrifice of quality or the flexibility which is important in producing specialized resins. The Rotterdam plant is, in effect, a duplicate source of supply since, in case of emergency, all products can be produced in either plant.

The plant is served by private railroad siding, truck terminal, and the Erie Barge Canal.

By virtue of centralized manufacturing and control facilities in two separate plants, together with district sales engineering and warehouse distribution, the company is extremely well prepared to serve industry throughout the country.

Finished lithographed tin plate emerging from two of the long ovens in a plant of Wheeling Steel Corporation at Yorkville, Ohio. Ovens are used to bake decorative coatings on thin metal sheets. The heat-generating apparatus is outside the oven, but heat is brought to the oven through ducts.—Photograph, courtesy of the J. O. Ross Engineering Corporation.

HOW A KOCH COMPLETE *Conveyorized* FINISHING SYSTEM SAVES YOU MONEY

When KOCH handles complete responsibility for your finishing system, there's perfect dove-tailing of all components . . . no costly delays, no "reworks" at the last minute.

KOCH handles your entire job — from layout through installation — with engineering, fabrication and installation efficiency that assures you of top production at a lower cost.

Every installation is backed by nearly 80 years of metalworking experience. Consult KOCH now!

* * *

KOCH also builds baking ovens, spray booths, metal washing equipment and air makeup systems. Write for Folder K-10.

Phone, Wire or Write For Details!

GEORGE KOCH SONS, INC.
EVANSVILLE, INDIANA

WHY AND HOW TO SET UP AND MAINTAIN *Quality Control*

BY H. W. CHESTER

FOR THE PAST several years an increasing demand has developed for not only beauty and variety in finishes, but also for quality. If the finishing department is going to meet these demands, then quality control is a must.

The old "hit or miss" methods have no place in the high production schedules of our modern finishing departments. Instead of that, we must develop and use sane, sensible, workable methods of producing the type and quality of finish that our customers are demanding. *Quality control* is the answer to this problem.

The condition of all furniture entering a finishing room, the finishing equipment, materials and supplies, the character of workers employed, supervision and inspection — all are vital in obtaining real quality control.

Furniture in the White Must Be Smooth, Clean and . . .

To set up and maintain quality control in the finishing department, several things are necessary. First of all, the furniture must be in good condition before the finishing process begins. Surfaces to be finished should be clean and smooth—that is, free from bruises, dents, marks, glue smears, glue spots, shop smudges and sander dust.

In some factories it is the practice now to spray a light thin coat of either glue size or shellac size all over the surfaces while the work is still in the cabinet room. This sizing coat is force dried for five minutes, or air-dried at room temperature for one hour. Then the sized surfaces are lightly sanded with No. 6/0 sandpaper, using an air-driven portable sander wherever possible. This treatment puts the furniture in excellent condition for finishing.

Defective furniture should never be started through the finishing department. It is not only impossible to produce a quality finish on a poorly prepared wood surface, but it is also a waste of time and finishing materials to try it.

Finishing Equipment Must Be Okay in Every Way

The next step in producing a high quality finish is to have and use proper equipment in the finishing

room. I know of no phase of furniture manufacturing in which proper equipment is more important and necessary than in the finishing room. Not only is it impossible to produce quality finishes with poor, inadequate and obsolete equipment, but this sort of thing slows up production, wastes expensive finishing materials and produces uncalled for rejects in the finished product, all of which costs the manufacturer a lot of money.

"We've got a new woodgrain machine at the plant—I'm learning to run it."

A thorough study of the finishing needs must be made by the foreman finisher, superintendent and, if necessary, an engineer. This kind of cooperative survey will show what is necessary in the way of spray guns and parts for same, fluid pumps, spray booths, pressure tanks, lighting equipment, the proper volume of air that enters finishing room, and adequate exhaust for all spray operations.

Finishing Materials Selected And Tested for Quality

We must make sure that the high standard of quality in finishing materials is maintained. All reputable finishing material suppliers spend great sums of money in both research and laboratory control to try to maintain uniform standards of quality in the manufacture of their materials. However, in these days of keen competition, some firms that make these materials may have to sell many of their products at so close a margin of profit that they are compelled to use cheap raw materials. This is especially true in the lowest priced materials.

Sometimes there hasn't been time enough to do the proper amount of research work before a product is put on the market. This may be the reason why certain materials produce poor finishes. Then again it is not beyond the realm of possibility for a manufacturer of finishing materials to make a mistake in the production of some one or more materials; they may be low in solids, poor in adhesion or color retention, etc.

In the several furniture factories with which I am associated it is customary for us to determine whether or not a material meets our requirements by trying it in production. While this test is necessary to show the quality of the finish we are to produce, it does not reveal just what can be expected in the way of looks and durability after the furniture has been in service for six months to a year. For this reason it is necessary to have some sort of means by which each ship-

ment of materials may be tested. It should be tested for solids, viscosity, cold check resistance, print resistance, adhesion, color retention.

Several furniture manufacturers have put in small laboratories of their own for testing the finish on their products. A small shop testing laboratory can be set up at a nominal cost. However, if this is undesirable or impossible then there are a number of independent testing laboratories that specialize in this type of work. Materials or products may be sent to them at intervals for checking.

Employees Trained to be Skillful and Smart

Another thing necessary for maintaining quality control in wood finishing is properly trained employees. By this I don't mean that every employee must be a highly skilled workman (in these days of scarce manpower a foreman must be constantly training new employees) but that every employee should be so schooled or trained that he will know just what he must do on a certain job to help produce the quality of finish that is desired.

The maintenance of quality control calls for "a process of education". In order to do a good job, each employee must be taught to use his knowledge, his good judgment, his hands and the tools provided in the finishing room. For instance, he should know how to use a spray gun and what air pressure is desirable or required for the job on hand.

If a quality control system is to function properly there must be adequate inspection throughout the finishing process. I realize that *quality must be built into a furniture finish rather than inspected into it, but we must have inspection too.* These inspectors must be trained to know just what is expected in the way of quality in our finishing department. Having acquired this information they must then have the final say as to whether or not the finish on each piece of furniture will meet the company's standard for quality, or whether it must be rejected.

Keep in Mind Cost, Too; Otherwise, No Profit

Still another thing we must always keep in mind while striving to get and maintain quality control in wood finishing is the cost factor. If we are not careful our quality list may be too long for the price our firm receives for its furniture. While there is a point below which the quality of our finish should not go, regardless of the price of the finished product, there is also, because of the cost factor, a practical limit to the features that we can crowd into our finish on any one piece or on any line of furniture, regardless of price. We must be practical and realistic.

If the goods are in good condition when they enter the finishing room, if we have proper equipment, if our materials are of the quality expected, and if our employees have the necessary training in quality control, then I am sure that it will be possible to produce the quality of finishes our customers demand, and at the same time keep our finishing costs within the bounds of reason. [THE END]

What to Consider For Better Dipping

IN DIP FINISHING operations it is possible to reduce the drip and drain of paint off the coated objects by checking three things. First, the position of the object to be dipped, then the speed of the conveyor or mechanical dipping device and last the viscosity of the coating material.

The object should be positioned on the rack so that the entire surface will be coated; and to promote fast draining of excess paint to one central low point.

Speed of the conveyor or mechanical dipping device should be equalized, as closely as possible, with the rate of flow of the paint off the surface of the object. As this rate of flow is directly dependent upon the viscosity of the coating material, it is highly important that the established viscosity be consistently maintained.

How often the viscosity of a paint material needs to be checked in order to maintain a uniform level is dependent upon several things, such as the type of coating material used, shop temperature, size and shape of the dip tank, volume of air exhausted from the hood over the tank, atmospheric conditions, humidity, etc.

Some of these factors can be controlled better by heating the material in the tank to a definite and established temperature. This may be done by pumping paint from the bottom of the tank through a filter and

(Continued on page 66)

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for Metals, Ceramics, Rubber, Plastics & Textiles
Be 100% right in all your wear and abrasion tests with the Taber Abraser. This instrument simulates actual wear conditions on metals, plastics, paints, rubber, linoleum and textiles during test and gives you an accurate numerical index for your report. Recognized as the standard abrasion test and used by leading product research laboratories the world over.
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Above: Mahon Self-Housed Finishing System installed on the roof of the Hamilton Manufacturing Company's Plant, Two Rivers, Wisconsin. Note Conveyor Tunnels extending across the roofs of buildings to fabricating and assembly areas. **Upper Right:** An 87 ft. Mahon Hydro-Filter Spray Booth. This is one of four Mahon Hydro-Filter Spray Booths in the Hamilton installation—two of the four are automatic, electrostatic spray booths.

Mahon Self-Service Paint Finishing Unit with [illegible] of the Hamilton [illegible] Unit built to take [illegible] parallel conveyor lines in a single processing tunnel.

M

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SYSTEMS

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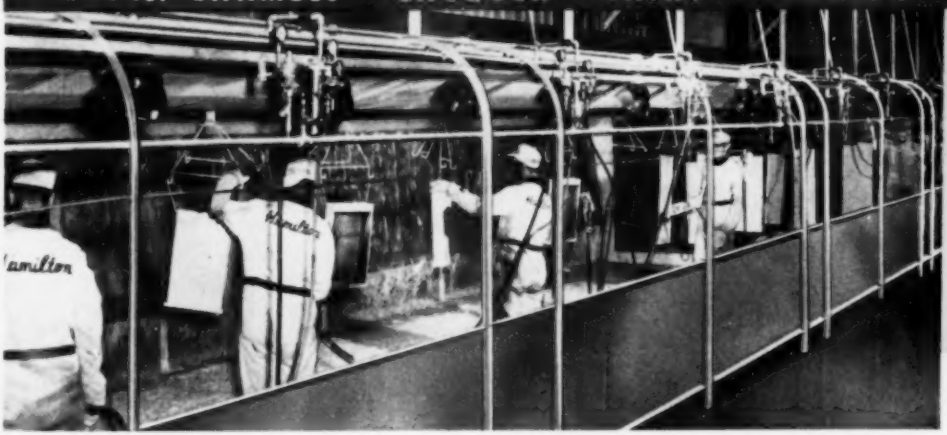

Modern, Self-Housed Mahon Finishing System Installed on the Roof Saves Floor Space at Hamilton!

Illustrated here you see a Complete, Self-Housed Mahon Finishing System built on the roof of the Hamilton Manufacturing Company's plant to conserve manufacturing floor space. Parts are processed on three separate conveyor lines, the longest of which is approximately one-half mile in length and requires four hours for a complete circuit at a conveyor speed of 10 feet per minute. This is an excellent example of Mahon planning and engineering in close cooperation with Hamilton executives. If you are contemplating new finishing equipment, you will find that Mahon engineers are better qualified to determine your requirements and to do the all-important planning which is the key to high quality results in production finishing . . . better qualified because thirty years of experience in planning, engineering, building and installing thousands of finishing systems of every type and size, for virtually every industry, has endowed Mahon engineers with a wealth of technical knowledge and practical know-how not available to you elsewhere. In the automotive field and the home appliance field, where fine finish is imperative, you will find more Mahon Finishing Systems than all other types combined. See Sweet's Mech. Ind. File for complete information, or write for Catalog No. A-653.

THE R. C. MAHON COMPANY

HOME OFFICE and PLANT, Detroit 34, Mich. • WESTERN SALES DIVISION, Chicago 4, Ill.

Engineers and Manufacturers of Complete Finishing Systems—including Metal Cleaning and Pickling Equipment, Cleaning and Rust Proofing Equipment, Dry-Off Ovens, Hydro-Filter Spray Booths, Filtered Air Supply Systems, and Drying and Baking Ovens; Core Ovens, Hydro-Foam Dust Collectors, Dust Traps, Fog-Filters, and other Units of Special Equipment.

AHON

then through a paint heater before it is returned to the tank through a series of nozzles located across the width of the exit end of the tank. The nozzles should be just below the surface level of the material.

In nearly all dipping operations most of the paint that drips and drains off the objects is wasted, and any waste is expensive.

Paint Industries Show Chicago, Nov. 18-22

Fourteen companies will cooperate in an exhibit of lacquer techniques, equipment, and raw materials at the Paint Industries Show in Chicago, November 18-22.

This is the second time in the history of the Paint Industries Show that such a cooperative educational exhibit will be displayed. The first was held at last year's Paint Industries Show in Atlantic City.

The Lacquer Information Center will present the latest developments in nitrocellulose lacquers. Visitors will be able to learn about the latest methods of application, durability data, developments in furniture finishing, equipment news, military lacquers, new emulsion techniques, and aerosol formulations.

Lacquer-finished items on display will include automobile hood and fender sections, furniture, and many test panels. Also on display will be the newest items in lacquer spray equipment.

One of the more recent developments in lacquer is aerosol lacquer. At least three manufacturers of these lacquers will have representative samples of their products on display.

Representatives from all the companies participating in the exhibit will be in attendance to answer questions.

Michigan Oven Co. Adds Two Men For N.Y. Territory

Michigan Oven Co., Detroit, Michigan, announces the appointment of A. N. Mason and John Kenneth Gillett as its sales representatives in Metropolitan New York, including northern New Jersey. Mr. Mason and Mr. Gillett will also represent Eclipse Fuel & Engineering Co.

Mr. Gillett has been engaged for a number of years in sales work and engineering involving combustion systems, material handling and ovens for other well known firms. He was vice president and sales manager for one company with which he was associated for four years.

Mr. Mason has served as an industrial sales engineer representing some nationally known oven companies.

Detrex Promotes Two in Industrial Sales Division

The promotion of L. Camel to the position of Divisional General Sales Manager of the Industrial Chemical Division, and D. E. Willard to Divisional General Sales Manager of the Industrial Equipment Division is announced by W. F. Newbery, Director of Sales for the Detrex Corp.

Mr. Camel will direct the sale and service of the Chemical Division products which include: emulsions and alkali cleaners, strippers and spray booth compounds; phosphate coating processes for rustproofing, paint bonding and the cold extruding of steel; and the silicone coating removal processes and cleaning compounds for another division.

Mr. Willard will control the sale and service of the Detrex line of solvent degreasing machines and solvents, and the mechanical washers used in industrial production cleaning.

These changes represent another improvement in customer market and service relationships.

D. E. Willard (left), L. Camel (right) developing new plans with W. F. Newbery, Sales Dir.

Crystal Clear

PERFECTION SYNTHETIC FLAT FINISHES

No distortion . . . no cloudiness . . . and a wonderful WAXED EFFECT with HAND RUBBED APPEARANCE

You'll be amazed at the difference in finished appearance . . . the full beauty of woods and grains . . . the ease, convenience and economy . . . when you use PERFECTION FLAT FINISHES. A grade to suit each budget and drying time. ***Write for samples.***

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FEEL THE DIFFERENCE

Perfection **PAINT & COLOR COMPANY**

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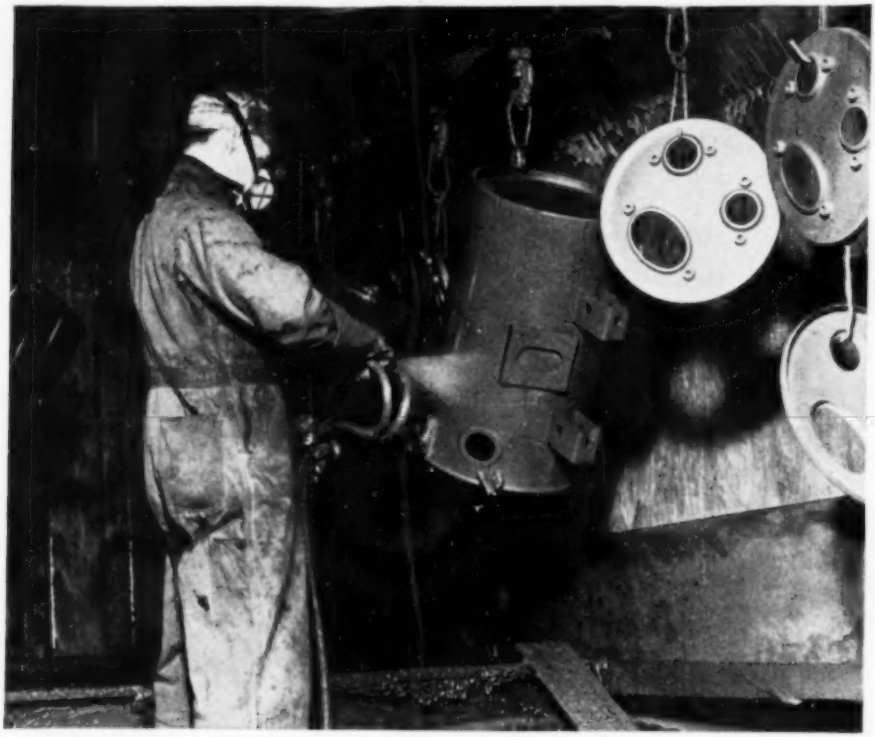
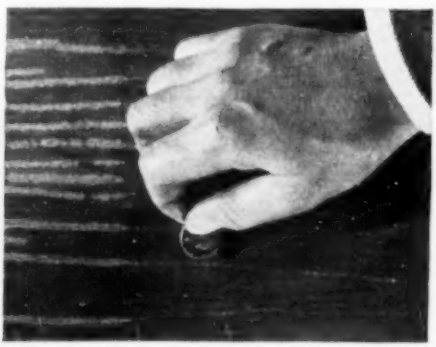


WHETHER THE WEATHERMAN brings snow and ice or a scorching summer sun, these step-down transformers will be protected over the years. They're being sprayed with a heavy-duty DULUX finish scientifically formulated to stand up to outdoor exposure.

EYE-CATCHING Du Pont DULUX Enamels on porch and lawn metal furniture promote showroom sales, stay smart for years.



DUCO Penetrating Primer gives lacquer-finished wood furniture added scratch resistance, as right side of test panel shows.

Step-down Transformer That Stays Up for Years

It takes a rugged finish to keep a transformer looking good after 15 years or more on a telegraph pole. But it is not unusual for Du Pont DULUX enamel to do just that.

A leading manufacturer of step-down transformers needed a finish that would provide outdoor protection and good looks over a long span of years. So Du Pont chemists developed a special finish formula containing the famous DULUX vehicle —a finish that takes hard knocks during installation and servicing of the transformers, a finish that resists sudden temperature changes without blistering and cracking, a finish that stays uniform in color year in and year out whether in sun or shade. It has been an important factor to utility companies in keeping up appearance and keeping maintenance costs down.

This is one of more than 12,000 Du Pont finish formulas now serving industry. If you're seeking a way to cut maintenance costs—or to make a product look better, wear better, sell better—contact the Du Pont sales technician in your area . . . or write E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington, Delaware.

Du Pont Industrial Finishes

Chemically engineered to do the job *better*

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150th Anniversary

Better Things for Better Living

...through Chemistry

DUCO AND DULUX ARE REG. U. S. PAT. OFF.

FINISHING KITCHEN CABINET UNITS IN Natural Hardwood

BY D. K. LUTES

Industrial Division, Technical Service Dept.,
Sherwin-Williams Company at Chicago

Describing methods, procedures and products used in finishing hardwood kitchen cabinet units in natural and clear finishes. Typical finishing systems used in the cabinet industry are outlined in detail — including the use of stains, fillers, sealers, lacquers, varnishes and air-dry and baking synthetic coatings.

THE WOOD kitchen cabinet industry has kept abreast of changes in over-all kitchen style and design by introducing new cabinet models. In addition to new models, some interesting trends in finishes have developed. Natural wood finishes, for example, have become popular since the ranch-type home was introduced.

In many cases the semi-gloss or low sheen finish has become more desired than a high gloss finish. On the other hand, with some cabinet suppliers, and in some areas, the gloss finish remains foremost. Selection of the proper gloss for a kitchen cabinet finish often depends upon the sheen of the porcelain that accompanies the ensemble, such as the sink unit, cabinet top, range and refrigerator.

In the kitchen cabinet field hardwoods are used extensively in the natural finish line. Hardwoods are satisfactory for this product, since they have natural beauty, strength and resistance to severe service. The hardwoods generally used include maple, birch, tupelo gum and beech. Other woods, used to a lesser degree, for select and custom built cabinets, include mahogany, walnut and oak.

Turning out wood cabinets in a natural or clear finish may include staining, wash coating, filling, sealing, final coating, rubbing and polishing. In order to understand the complete finishing cycle, it will be necessary to briefly consider each operation, with its related product, individually.

Excerpts from a paper prepared for and read at Sixth Annual National Meeting of Forest Products Research Society, at Milwaukee, Wisconsin, June 23 to 25, 1952.

Staining Adds Color and Uniform Overall Tone

The function of a stain is to impart color to the wood surface without obscuring the grain or pattern detail. Stains also help to even up color differences in the wood, thereby giving the cabinet a uniform overall tone. Stains consist of transparent or semi-transparent colors—generally natural or synthetic dyestuffs or pigments—suspended in a solution of volatile liquids.

Selection of the proper stain for a given finish depends on careful consideration of several variables, for example:

1) Type of wood to be stained.
2) Whether light, medium or dark finish is desired.
3) The finishing schedule planned.
4) Method of application: Dip, brush, spray, wipe or non-wipe.
5) Quality of complete finish desired: Medium or high grade.
6) Durability required, as resistance to fading, color retention, etc.

For simplicity and convenience, wood stains have been classified on the basis of the liquid or solvent in which the coloring matter is dissolved. The major groups are:

1) Water-soluble stains.
2) Penetrating oil stains.
3) Pigmented wiping stains.
4) Spirit-soluble stains.
5) Non-grain-raising stains.
6) Specialty stains (sapwood stains, trim stains, etc.).

Only two of these stain groups are generally used for kitchen cabinet finishing. They are the pigmented wiping stains and the non-grain-raising stains.

Stains for production should, as nearly as possible, approach the following desirable characteristics:

1) Do not raise grain of wood. (This property is not always achieved, for example, in water stains and spirit stains.)
2) Provide uniform staining effect.
3) Do not bleed into succeeding coating materials.
4) Classify as fast-to-light.
5) Dry rapidly.

Filling is Needed for Open-Grain Woods

Filling is often referred to as "the foundation of a fine finish". With certain large-pore, or open-grain woods such as mahogany, walnut and oak, filling is necessary to build a smooth, lustrous, durable natural finish. Many close-grain woods such as birch, beech and maple are often finished without using a filler. In some cases a thin filler is used on close-grain wood before finishing to equalize the absorption of the different surface areas. Often pigmented wiping stains have sufficient filling properties for close-grain wood. If a pigmented stain is used, a regular filler is not needed.

The main function of a filler is to fill open pores and grain depressions. A filler also prevents subsequent varnish or lacquer top coats from being absorbed by the wood. Quite often a filler is used to impart color (harmonizing or contrasting) to the wood pores and thereby accentuate the grain.

What's in Fillers? Solids, Color, Oil, Drier, Solvent

Wood fillers fall into two general groups—paste fillers and semi-paste fillers. Semi-paste fillers are the most widely used at present. A typical semi-paste filler is composed of the following ingredients:

1) Non-absorbent, colorless, inert pigments such as silica (silex), calcium sulfate (gypsum), and asbestine.

A) Color pigments such as umbers and siennas (in some types).

2) Non-volatile vehicle, generally raw or boiled linseed oil, which serves as a binder. Fast dry types contain special processed oils or vehicles.

3) Suitable metallic driers, such as lead, manganese, cobalt naphthenes.

4) Solvent.

As a rule it is necessary to impart some color to fillers. This is done by putting in earth color pigments, such as the umbers and siennas. High grade fast-to-light lake colors are used in many fillers to achieve a desirable color tone. The selected color of the filler will depend on the wood being finished and the degree of grain contrast desired in the final finish. In general, the color of the filler in the pore should be slightly darker than the rest of the wood.

If the color of the filler is close to or lighter than the wood, a hazy appearance may result in the final finish. A filler that is light in color is, at times, used in some modern finishes to achieve a blend or bleached effect in the final finish.

Applying Filler; Padding in, Wiping, Drying

In a conveyorized finishing setup, it is customary to spray the filler. Naphtha or lead-free gasoline may be used to adjust the filler to spraying consistency. In some finishing rooms the filler is brushed on.

The filler is allowed to dry for two to four minutes. At this point it begins to harden slightly and it takes on a dull or flat appearance. As soon as the filler has become dull, the surplus must be removed by a combined padding and wiping operation. Skillful padding and wiping packs the filler into the wood pores. Cotton cloth, waste, jute, tow, hemp or burlap are generally used for padding in and wiping filler. The usual practice is to pad in and wipe across the grain; this is followed by a light wiping with the grain to remove streaks.

In some factories the filler is allowed to dry overnight; however special fast-dry 4-hour fillers or one-hour baking fillers have been used with considerable success on fast production schedules. If proper drying of the filler is not achieved there may be swelling in the pores due to absorption of the solvent present in the subsequent sealer coat. Improper drying is often the cause of the filler turning gray in the pores of the wood. [*To page 74*]

"Man! Talk about your blond finishes!"

New, Rich, Effective,

Silver Mink Finish by the

GILBERT SPRUANCE COMPANY

The above photograph —courtesy of Seiling Furniture Company.

The bedroom suite pictured above was finished with products originated and manufactured by the Gilbert Spruance Company.

It was the "talk" of the New York Furniture Show — and we are proud of the part we played in its success.

We have ever been originators of finishes, rather than imitators. We work closely with our customers to create and manufacture finishes that will sell their products — add prestige to their lines.

We invite you to utilize our laboratory facilities and long experience for the purpose of developing finishes to meet your requirements.

THE GILBERT SPRUANCE COMPANY

PHILADELPHIA 34, PA. • WINSTON-SALEM, N. C.

Why Sealers are Used; Spraying; Drying

Sealers fall into three broad classes: Lacquer sealers (fast dry) shellac sealers (fast drying) and varnish sealers (slower drying). The main function of a sealer, as the name implies, is to seal the surface of the wood, and thereby prevent absorption of succeeding finish coats.

All wood, whether open-grained or close-grained is porous. If the surface is not sealed some penetration and absorption of the final finish coat is sure to occur. Other valuable functions of the sealer are to: 1) seal in the filler, 2) blend or moderate the stain, 3) stiffen any raised grain or minute wood fibers to expedite sanding and 4) form a bond between the wood and finish coat.

Lacquer sealers are almost always applied by spraying. A wet even coat should be put on, but the surface should not be flooded. If too heavy a sealer coat is applied, swelling of the filler and brittleness in the final finish may result.

Most lacquer and shellac type sealers will dry to sand within 30 minutes to one hour. Varnish type sealers generally require overnight to dry before sanding. In some finishing rooms varnish sealers are force-dried for two to three hours at 130° F.

Sanding the Sealer Coat; What a Wash Coat Does

When the sealer coat has dried hard, it should be lightly dry-sanded with fine sandpaper such as No. 5/0 to 7/0. Either manual or automatic sanding is acceptable; however care should be taken to prevent excessive sanding that will cut through and destroy film continuity. If the sealer film is broken, the sanding will strike into the stain coat. This will result in poor color effect in the final finish. After sanding, all dust should be blown away and the surface wiped clean with a tack rag. The surface is now prepared to receive the final finish.

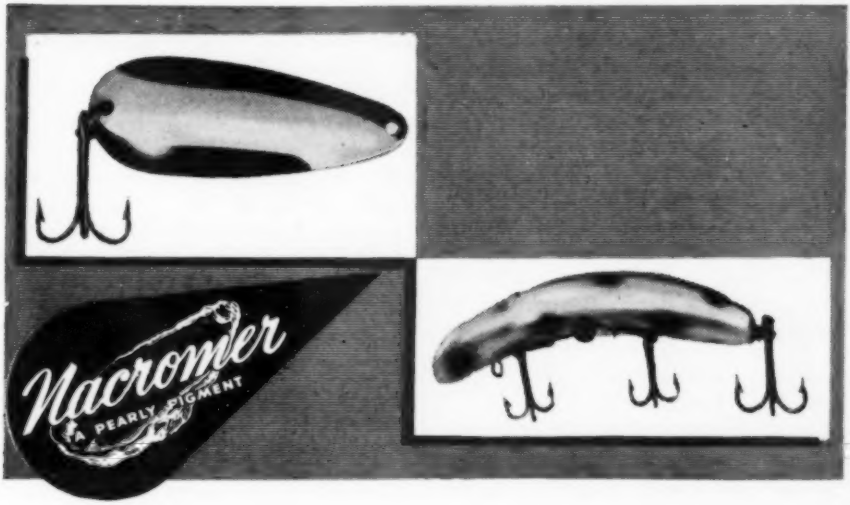
Before leaving the subject of sealers, we might mention wash coating. Wash coating (applied by spraying) is actually a slight sealing operation which is sometimes included with the finishing cycle. A wash coat is merely a very thin shellac or lacquer sealer. It precedes filling; its main function is to aid sanding prior to filling. A wash coat enables the surplus filler to be removed with greater ease. Penetration and drying is fast, thereby allowing sanding within 45 minutes or less. In many finishing schedules, wash coating is not required.

Final Finish Coats; Lacquer Dries Fast

The final clear finish used on kitchen cabinets is a lacquer or varnish or synthetic coating.

Lacquers contain an appreciable quantity of nitrocellulose modified with natural or synthetic resins and plasticisers. A properly balanced mixture of volatile solvents provides rapid drying by evaporation, and results in a clear, hard, durable film. Lacquers used for cabinet finishing include clear gloss rubbing and polishing lacquers, and clear flat or rubbed-effect lacquers.

The selection of any given lacquer depends upon the ultimate fin-



a pearly finish to catch customers

Manufacturers of fishing lures have long mixed Nacromer with their finishes to obtain a lustre and brilliance almost comparable with natural pearl essence—at a fraction of the cost.

Yes, any product made of wood, metal or plastic can attain a sales-tempting lustre with the addition of Nacromer to the finish. Office equipment? Yes, sir! Kitchen cabinets? You Bet! Toys? Perfect!

Now, test Nacromer on your product. Tell us what you make and we'll send a generous working sample.

the *Mearl* corporation

"World's Largest Producers of Pearl Essence"

153 Waverly Place New York 14, N. Y.

ish desired; that is, whether it is to be a high gloss, semi-gloss, flat or rubbed-effect finish. Lacquers are widely used because they dry rapidly to fit in with fast moving production schedules. One or two coats may be applied. Generally if a gloss finish is desired, two coats of a gloss lacquer are applied, with a one or two hour drying period between coats. If a flat or a semi-gloss finish is desired, one coat of lacquer may suffice.

Varnish Coats Dry Slowly But Still Have Merits

Varnishes are clear coatings consisting of natural gums or synthetic hard resins dissolved in one of several oils, such as linseed, soya, tung, or dehydrated castor oil. The resin solutions are further thinned with various solvents such as turpentine, naphtha and alcohol.

Within the last 20 years varnish making has changed from an art to a highly technical science. The old type oleoresinous varnishes, containing fossil gums in an oil, have been replaced by more complex synthetic resin-in-oil combinations. Many natural fossil resins, such as Kauri, amber, copal and damar have been replaced, to a large degree, by synthetic resins, such as ester gum, phenolics and others too numerous to mention.

An oil varnish contains drying or semi-drying oils which dry and harden by oxidation. Varnishes are generally charged with small quantities of metallic driers, such as lead, manganese and cobalt naphthenate, to accelerate drying.

Some varnishes used by the cabinet industry include the quick setting, hard drying, short-to-medium-oil-length varnishes. Rubbing varnishes are used too.

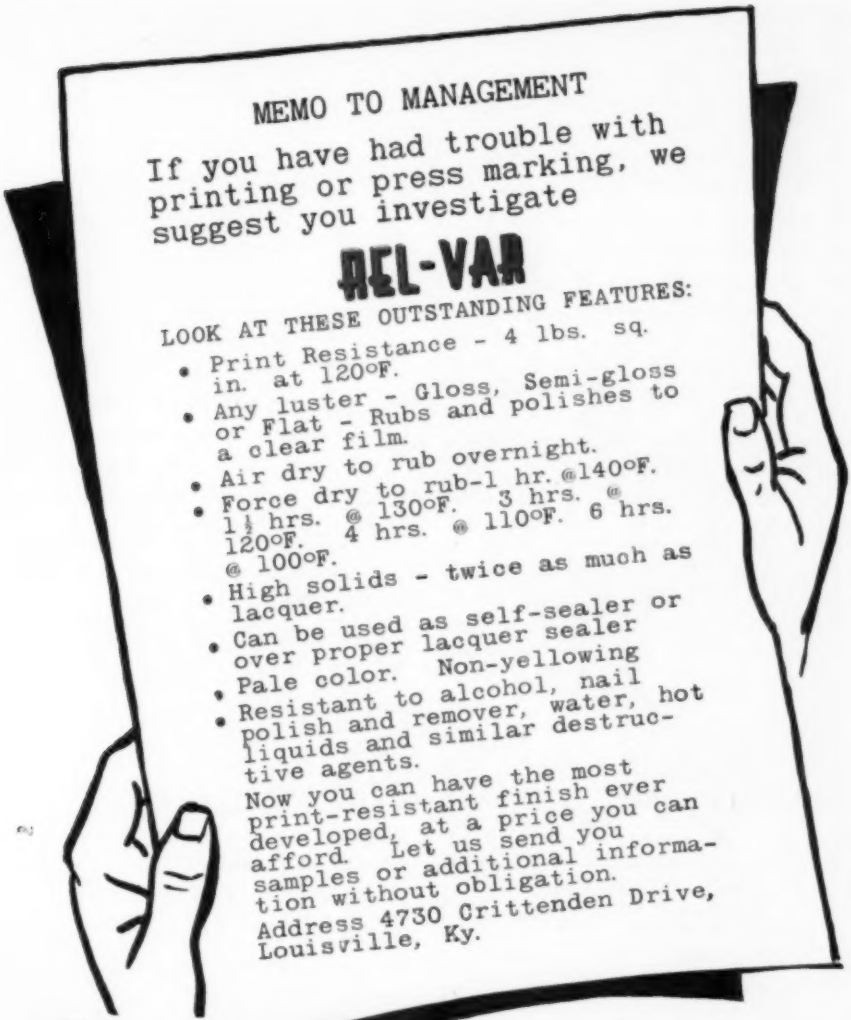
Varnishes are not used as widely in production as lacquers because they dry much more slowly. The slow drying characteristic of varnishes tends to slow up production finishing; also it usually results in a dirt problem on the final product. The slightest bit of dust or lint flying around in the finishing room will adhere to the slow drying varnish film. Varnishes do not fit into present-day production schedules as well as the faster drying finishes.

Varnishes do provide a depth in appearance and build of film which is not always possible to achieve with lacquers.

Clear Synthetics Finishes, Air Dry and Baking

Clear synthetic finishes differ from varnishes, even though the two terms are quite often used interchangeably. A synthetic resin finish is actually a product born in the chemist's test tube. Synthetic resins include phenolics, urea-formaldehyde resins, vinyl resins, alkyd resins and others.

Alkyd resin coatings comprise an important group of synthetic resins. Alkyds are reaction products of a polyhydric alcohol, such as glycerol, and a polybasic acid, such as phthalic anhydride in the presence of an oil such as linseed, soya, castor oil or others. The major characteristics of the alkyd resin are imparted by the type of modifying oil used, and also by the degree of oil modification. During the reaction a complex molecule is formed by a com-


MEMO TO MANAGEMENT
If you have had trouble with printing or press marking, we suggest you investigate
REL-VAR
LOOK AT THESE OUTSTANDING FEATURES:
• Print Resistance - 4 lbs. sq. in. at 120°F.
• Any luster - Gloss, Semi-gloss or Flat - Rubs and polishes to a clear film.
• Air dry to rub overnight.
• Force dry to rub-1 hr. @140°F. 1½ hrs. @ 130°F. 3 hrs. @ 120°F. 4 hrs. @ 110°F. 6 hrs. @ 100°F.
• High solids - twice as much as lacquer.
• Can be used as self-sealer or over proper lacquer sealer
• Pale color. Non-yellowing
• Resistant to alcohol, nail polish and remover, water, hot liquids and similar destructive agents.
Now you can have the most print-resistant finish ever developed, at a price you can afford. Let us send you samples or additional information without obligation.
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Rely on Reliance
RELIANCE VARNISH CO., INC.
AFFILIATED FACTORIES IN
LOUISVILLE, KY.

bined process of condensation and polymerization.

Of course, there are many different types of synthetic resins; however, only a few specific types, for clear coatings, are applicable to wood cabinet finishing.

Low Bake Synthetics Give Build, Luster, Depth

Within recent years low bake, clear synthetic cabinet finishes have been developed and used successfully. These finishes are alkyd types modified with urea-formaldehyde resins. They generally contain from 40% to 50% non-volatile solids and are supplied at ready-to-spray viscosity. In order to obtain proper drying under the low bake schedule, this type finish is further modified with an accelerator just before use. An excellent finish, with good build, luster and depth in appearance, is produced when the finish is force-dried for three hours at 130° to 140° F.

From a quality standpoint, the heat converting urea-alkyd coatings are equal to or better, in general durability and hardness, than a high grade lacquer. They are superior to lacquers in resistance to alcohol, food stains, nail polish remover and similar reagents. Synthetic heat-converting type coatings are particularly well adapted to conveyorized operations, where suitable baking facilities are available.

"Now, if you'd prefer the large economy size . . . ."

Rubbing, Polishing Produce Professional Appearance

The final touch to a fine natural finish is achieved through rubbing and polishing.

Rubbing consists of applying friction to the film with a fine abrasive and a lubricant. Abrasives used for rubbing include such materials as pumice, diatomaceous silica, rottenstone, or a combination of these materials. A thin petroleum base oil is widely used as a lubricant for rubbing. Rubbing can remove small imperfections in the film such as faint orange peel, waves and dust specks. The amount of rubbing required depends upon the degree of imperfections in the film.

Polishing is a process by which the luster of the film is increased through applied friction with fine grade abrasives. Polishing follows rubbing. It is important that any film, whether lacquer, varnish or synthetic, be thoroughly dry before attempting either rubbing or polishing. The amount of polishing required depends upon the desired sheen or gloss in the final product.

(Continued on page 80)

Now

-bake NU-PON primer

SPRAY

FLO-COAT

DIP

- Far superior to conventional primers.
- Maximum moisture and corrosion resistance.
- Better protection with less film thickness, resulting in increased mileage and greatly reduced finishing costs.
- Reduces with low-cost aromatic solvents.
- Faster and easier to use—adaptable to any finishing method.
- Proved by actual use in plants of major appliance manufacturers.

QUALITY Glidden PRODUCTS

Write, wire or phone for complete information today.

THE GLIDDEN COMPANY

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MAKERS OF NUBELITE • BOMBAY BLACKS • SPATTERLOID • SPATTERTONE AND OTHER FAMOUS INDUSTRIAL FINISHES

Typical Schedules That Produce Natural Finishes

It may be of interest to outline one or two complete natural wood finishing systems typical in the wood kitchen cabinet industry.

A representative finishing schedule for a close-grain wood, such as maple, could be as follows:

1) Preparatory sanding of wood, using No. 5/0 or 6/0 sandpaper.
2) Removal of sanding dust by air blast.
3) Apply NGR stain; dry one hour.
4) Spray lacquer sealer; dry for 30 minutes to one hour.
5) Sand with No. 6/0 or 7/0 sandpaper.
6) Remove sanding dust with air blast and tack rag.
7) Spray (rubbing and polishing) lacquer. Dry one to two hours.
8) Spray second coat of rubbing and polishing lacquer. Dry overnight.
9) Rub finish completely.
10) Wipe rubbing mixture from surface.
11) Polish to desired sheen.

Variations of this system may be found. A varnish or a synthetic clear topcoat could be used in place of lacquer. It is important to note that the close-grain maple did not require either a wash coat or the use of a filler.

A representative finishing schedule for an open-grain wood, such as oak, would be:

1) Sand wood in the white, using No. 5/0 or 6/0 sandpaper.
2) Remove all sanding dust by air blast (compressed air gun).
3) Apply stain, if required; dry one hour.
4) Spray lacquer washcoat; dry 30 minutes. Sand lightly with fine sandpaper . . . . and clean the surface.
5) Apply filler; let set; pad in and wipe.
6) Allow filler to dry four hours to overnight (depending on type).
7) Spray lacquer sealer coat. Dry 30 minutes to one hour.
8) Sand with No. 7/0 sandpaper.
9) Remove sanding dust by air blast and tack rag.
10) Spray (rubbing and polishing) lacquer. Dry one to two hours.
11) Spray second coat of rubbing and polishing lacquer. Dry overnight.
12) Rub finish completely.
13) Wipe rubbing mixture from surface.
14) Polish to desired sheen.

The finishing schedule just given for oak is somewhat more complex than the schedule given for maple.

Since oak has large open pores, it is desirable to include two additional operations—wash coating and filling. Open-grain woods require a greater amount of preparation for the final finish than close-grain woods. In either of the schedules given, more than one coat of lacquer finish could be used. It would be possible, as in the case of the maple finish, to use varnish or a synthetic type topcoat instead of lacquer.

REPRINTS AVAILABLE

"The Theory and Practice of FINISHING FURNITURE"

from October, November, December, 1951, and January, February 1952 Issues.

PRICE 20 CENTS PER COPY—Stamps Accepted.

INDUSTRIAL FINISHING Magazine

1142 N. Meridian, Indianapolis 4, Ind.

HOT Lacquer NEWS

PUBLISHED PERIODICALLY BY HERCULES POWDER COMPANY IN THE INTERESTS OF BETTER FINISHES AND FINISHING

Wurlitzer Piano Finishing Rate Up 33% with Hot-Spray Lacquer

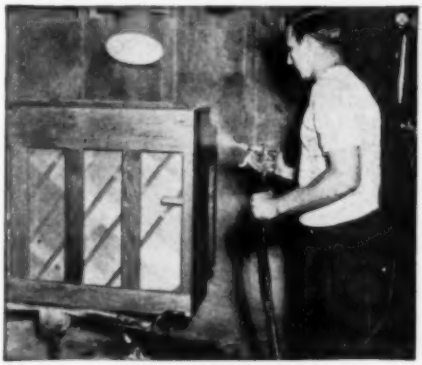
Quality Finish Also Cuts Rubbing and Handling Time

Before specifying hot lacquer, the finishing department in the Rudolph Wurlitzer piano factory at DeKalb, Illinois, put out 160 pianos in a 12-hour day. Since switching to the hot-spray process, the same number of pianos are now finished in a normal 8-hour day. Hot lacquer not only gives the famous Wurlitzer a better finish with fewer rejects, but also reduces application time. Because a piano is a large item, this faster finishing alleviates a floor space problem in the bargain!

Cellulose Products Department

HERCULES POWDER COMPANY
INCORPORATED

928 Market St., Wilmington 99, Del.



After case parts of the piano are assembled, final coats of hot gloss lacquer are applied.

Completed upright with hot lacquer finish.

Specification Lacquers for Finishing Military Items

Learn more about lacquer for defense finishing. Send for this handy guide to specification lacquers that helps you decide which finish you will need in performing government contracts. Specification numbers are listed, as well as an index to uses.

CL52-6

Rust Preventive Treatment

Can you supply more information on the paragraph entitled, "Corrosion Inhibitor", as mentioned on page 8 of August issue? This paragraph announced a new thermochemical treatment or process for the purpose of inhibiting corrosion, but failed to give details of the method or even mention who was responsible for its development. Any further enlightenment will be appreciated.—*C. E. C.*

For further information, we refer you to Stanwood Corp., 4823 W. Cortland St., Chicago 39, Ill.—*Editor.*

To Coat Coil Stock

In August issue, Letters from Readers, page 90, we notice a paragraph on coated coil stock by the United Steel Products Corp. We would appreciate your sending us the address of this company.—*E. K. Co.*

It's 5311 Avalon Blvd., Los Angeles 11, Calif. Another concern that specializes in this service is M. M. Young & Co., 8233 S. Princeton Ave., Chicago 20, Ill. Also, the Coated Coil Corp., 519 W. 30th St., New York 1, New York.—*Editor.*

Processors of Paint Sludge

We would appreciate your sending us a list of buyers and processors of paint sludge.—*C. C. Co.*

See advertisement on page 6 of Sept. 1952 issue.—*Editor.*

Dipping and Tumbling

Please furnish us with the names of manufacturers of dip lacquer equipment, and tumbling equipment. We are interested in finishing small wood turnings, as well as small cut-outs.—*G. M. Co.*

There are several manufacturers of each kind of equipment. In a letter we are sending you a small list of each.—*Editor.*

"I Was Foreman There"

In the Q. and A. section of September issue, page 82, I notice an inquiry about the excellent finish on Stromberg-Carlson TV cabinets. I was formerly finishing foreman there and will be glad to help "K. J. Co." if the Editor will advise me of "K. J. Co.'s" complete name and address.—*Mr. X.*

Information supplied by letter.

Baked Enamel Stripper

We have been using Vinyl-Base Baking Enamel for some time, but have been unable to obtain a satisfactory stripper for multiple coats of these materials.

We have in mind particularly that the stripper must be capable of removing as many as 50 to 100 coats, each baked on, such as would be found on work holders used in automatic spraying equipment. [*To page 85*]

Enamels • Undercoats

Fine Enamels and Undercoats made in all types. Air drying or baking. For wood or metal. Spray, dip, roller-coat, screenprint, squeegee or brush application.

•

STAINS

GLAZES

FILLERS

LACQUERS

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SPECIALTY FINISHES

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Industrial Finishes for Application by All Methods

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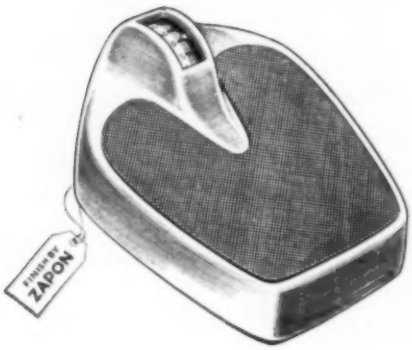
• IN STEP WITH THE TIMES •

JAMES B. DAY & CO.

CHICAGO 14

Kith and Kin on the Skin

Both casting plugs and bathroom scales
are enhanced by the quality of their finishes.
Good finishes are good business
for manufacturers, merchants, consumers.



ZAPON

"SERVICE FROM EVERY ANGLE"

Your product, too,
can be improved by ZAPON "custom-tailored finishes"
. . . by ZAPON "Service From Every Angle"
which works from our laboratory to *your* production line
to give you the best finish at the lowest cost!

ATLAS POWDER COMPANY • WILMINGTON 99, DELAWARE

for Industrial Finishes • Stamford, Conn. • North Chicago, Ill.

We have already been in touch with most of the large suppliers of such cleaning materials but have found nothing acceptable.

We would appreciate any recommendations you might offer as to manufacturers of a satisfactory stripper.—*K. E. Co.*

Perhaps more frequent stripping would be effective, to avoid having such thick coatings to remove. In a letter we are naming several concerns that offer stripping compounds (with technical service) which should solve your problem.—*Editor.*

Toys; Bright Colors; Methods

We have been referred to you as a reliable source of information, regarding some of our manufacturing problems in finishing toys made of wood.

We are producing a pusher toy that has 4-in. wheels made of Belgian Plywood; also dowels of 2-ft. lengths and small blocks from one to 6-in. in length, and in widths of ⅝ to 2-in.

In the pusher toy operation we first tried, for sampling purposes, certified colors of the food drug and cosmetic type. The plywood wheels were dipped in colors and then dried. Then they were placed into a wooden tumbler with hard white wax. The results were disappointing, in that the colors were not bright although a smooth coat of wax was acquired.

We thought perhaps either a non-toxic lacquer could be applied by dipping after the natural wood was tumbled, thereby applying a finer gloss to the toy.—*E. N. Toy Co.*

Several concerns who advertise their products in this magazine can supply safe enamels for wood toys—color enamels that product bright, lustrous durable coatings. In a letter we are naming some of those in and near your locality (New York). Choose one of them, ask a representative to call and when he looks over your shop and your wood toys he can suggest or recommend materials, methods and equipment which should meet your needs effectively and economically.

Also, in our letter, we are naming a few manufacturers of dipping and tumbling equipment.—*Editor.*

"This may sound silly, but when you said 'let's paint the town red tonight', do you know what I thought you meant?"

Masks for Spray Painting

In one of the past issues of this magazine we believe we saw an article or an advertisement about making masks suitable for spray painting.

Any advice you can give us regarding this, or anyone you can recommend that can furnish us the material to make these masks, will be appreciated.—*M. A. Co.*

Making these masks (that is, the kind we believe you have in mind)

calls for highly skilled workmanship, plus special equipment; really it is a business in itself. In a letter we are naming two or three concerns that specialize in designing and making these masks for various users throughout the country.—*Editor.*

Lacquering Mop Handles

Some time ago an article appeared in *Industrial Finishing* on squeegee lacquering of handles. We manufacture mop sticks and are eager to secure information as to who makes or sells equipment for lacquering handles by the squeegee process.—*W. K.*

The last article on this subject appeared in May 1952 issue, beginning on page 46. Usually the dipping tank, squeegee rubber and squeegee holder are "home made". However, in the article referred to above, a mechanical device is shown which actually dips and withdraws each wood handle. We understand that this mechanical device is designed and made by Tom Evans, 4115 Anita St., Houston, Texas.—*Editor.*

Synthetic Patching Sticks

In August issue, on pages 76, 78 and 80, we read with interest an article on "Patching Procedures" by Herman Hardesty. We manufacture a line of occasional tables upon which we use the high gloss finish.

We are interested in obtaining a source whereby we can purchase synthetic lacquer sticks that will be suitable for burn-in repair work on these high gloss finishes. Your cooperation in furnishing suppliers names whereby we can purchase this material will be greatly appreciated.—*R. J. Co.*

Information furnished.—*Editor.*

Automotive Color Mix System

We would appreciate your sending us a list of manufacturers of automotive lacquers. We are only interested in manufacturers having the inter-mixing system, by which you can reproduce any color on any make or model car.—*C. P. & V. Co.*

In a letter we are naming a few concerns which we believe can supply what you want.—*Editor.*

Badger Hair Blenders

On page 80 of September 1952 issue, we notice a letter of the C. S. Co., regarding badger blenders. Would you please oblige by forwarding to us the name and address of this concern?—*Industrial Products, Inc.*

Name and address supplied.—*Ed.*

Transparent Dye for Glass

On page 92 of August 1952 issue we notice an inquiry to the Editor regarding "Transparent Dyes for Glass." We too would appreciate receiving the list of companies you felt could supply these dyes.—*Rohr Aircraft.*

Information supplied.—*Editor.*

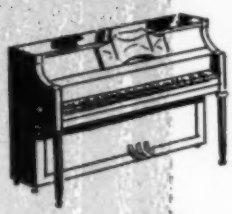
Dip Stain and Dip Paint

Please inform me as to who makes a dip stain that can be used with subturps or Varsol, and will not settle.

Also what is a suitable dip paint for sponge rubber balls?—*R. F. Co.*

If your accustomed source of supply isn't to your liking, try some of the concerns whose advertising you see in any copy of this magazine.

For Finer Furniture Finishes



Use New "CL-17 Sanding Sealer"

If you would like a better "hold out," plus a speed-up of your finishing system, use our new CL-17 Sanding Sealer. You'll be amazed at this product's performance. Why not ask us about a trial order?

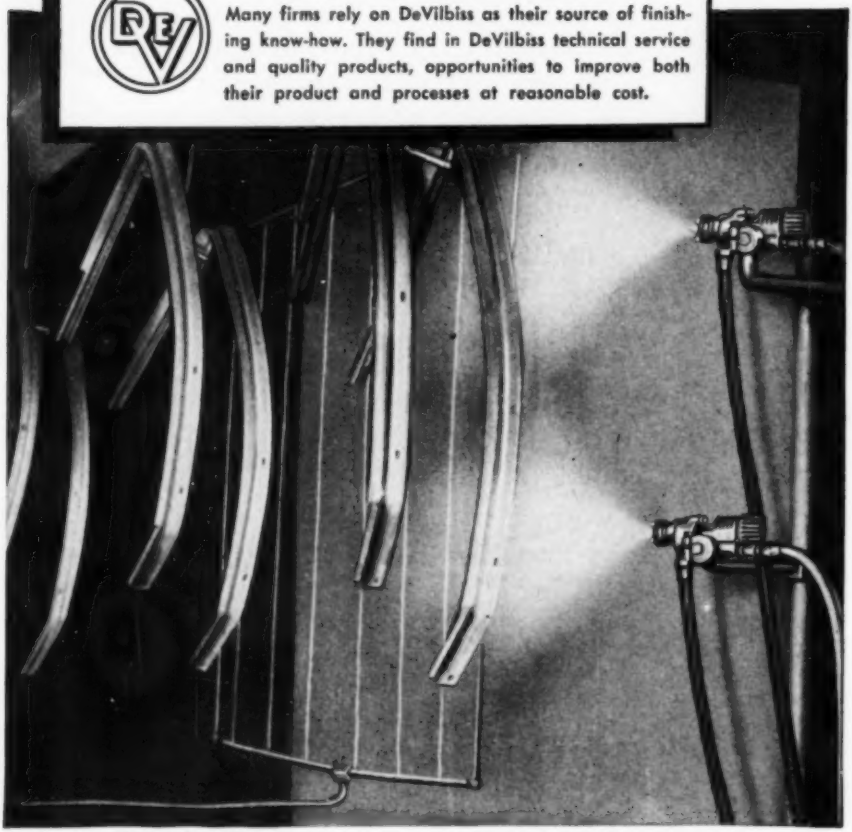
CPL

COAST Paint & Lacquer Co. Inc.

P. O. BOX 1113, HOUSTON 1, TEXAS

Take your problems to DeVilbiss

Many firms rely on DeVilbiss as their source of finishing know-how. They find in DeVilbiss technical service and quality products, opportunities to improve both their product and processes at reasonable cost.



DeVilbiss automatic guns are an integral part of the electrostatic spray set-up installed by an important auto parts manufacturer.

Air Compressors

Hose and Connections

Spray Guns

LET DEVILBISS HELP YOU SELECT THE PROPER SPRAY METHOD FOR YOUR JOB

Electrostatic, manual, automatic, steam or hot material—our broad experience covers *all* spray-finishing methods in every industry and under many and varied conditions.

The proper spray method may mean the difference between profit and loss in your finishing department.

We know you'll find DeVilbiss ideally equipped to help you. We have extensive research facilities, a skilled technical staff, over 63 years' spray-painting experience, and no prejudices regarding one spray method over another.

If you would like expert advice on new finishing problems, or if you believe present facilities can be improved, phone our nearest branch office or write us. We welcome the opportunity to serve you.

A New Service!

REBUILT EXCHANGE UNIT DEVILBISS Genuine Factory Standard

Now exchange worn-out guns, bare compressors for guaranteed factory-rebuilt units! Saves delay. Nominal charge.

THE DEVILBISS COMPANY, Toledo, Ohio

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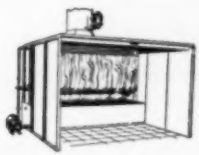


Spray Booths

FOR BETTER SERVICE, BUY

DEVILBISS

Keeping True Color on Master Sample

We produce considerable walnut furniture in light colors and it is necessary for us to duplicate these colors month after month in the same color.

Our problem is that our master samples, even though they are kept in folders and away from light as much as possible, are constantly darkening and turning amber, so that after four or five months they are not necessarily the same color. We use the best stain, toners and lacquers that we can purchase and, of course, these materials do change color gradually as well as the wood itself changes color.

Should these color samples be photographed in color and would the the color remain the same, or is there any other method to hold our master color to the original? Any suggestions will be appreciated.—*X.*

It is certain that color photography is not the answer because, in the first place, color photography does not reproduce color accurately enough for standardization purposes; and secondly, if it did, the colors used would be no better, from a permanence standpoint, than the dyes presently being used in wood stains.

All in all, perhaps the best solution would be to continue checking in the present manner, but make the checks frequently enough so that drift between checkings would not be serious.—*P.O. Blackmore.*

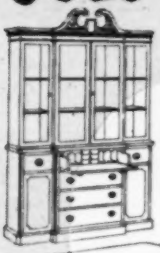
The question of color permanence of finishes for wood has always been a problem because *both the wood itself and the finishes applied usually undergo some color change on aging.* Since the War there has been considerable improvement in the resistance to color change of finishing materials, so that frequently today the wood itself undergoes a greater change than the finishes which are used.

In trying to solve this problem, the first step would be to check the color permanence of each finishing material used. This can be done by preparing a "step down" panel leaving a one or two-inch area of bare wood and each individual finishing material used exposed. Half of the panel should be tightly covered with aluminum foil so that half of each step is concealed and half exposed to light. The panel should then be exposed to direct sunlight in a window for two to four weeks and then examined to note which component of the finish contributed most to any color change which occurred.

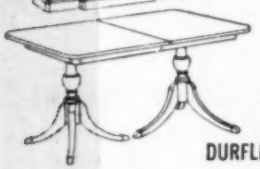
It is also desirable to check the degree of color change of the sealer and lacquer topcoats. There have been cases where a completely water white lacquer shows a greater degree of color change on exposure to sunlight than a light straw colored lacquer. This can be checked by applying the sealers and lacquers over a white enamel background. Again, half should be shielded with aluminum foil before exposure to direct sunlight to determine the degree of color change.

To the best of our knowledge, there

BARRETT'S new DURFLEX LACQUER
Greatly exceeds Industry Standards for
COLD CHECK RESISTANCE!



BARRETT'S DURFLEX LACQUER with its companion DURFLEX SEALER provides a tough, durable and flexible finish with proven ability to withstand long periods of storage in wide temperature extremes. In actual tests, DURFLEX showed no checking after 25 complete cycles under temperatures ranging from + 110° F. to — 6° F.



DURFLEX offers the combined advantages of high quality and low cost for finishers of Radio and TV Cabinets, Desks and other fine furniture. Like other high quality lacquers, DURFLEX dries to handle in two hours, and can be rubbed after an overnight drying. Most important, DURFLEX SEALER powders quickly and does not gum the sandpaper.

Available in sheens from dead flat to high gloss, BARRETT'S DURFLEX LACQUER is the ideal finish for your finest pieces. At the same time, its low cost will enable you to use this superior finish throughout your production schedule.

FREE SAMPLE
Try BARRETT'S DURFLEX SEALER and DURFLEX LACQUER in your own plant at our expense. Write on your company letterhead for free samples. Please specify sheen desired.

Other Fine BARRETT Finishes Include:
WONDERFLAT LACQUER
WONDERHOT LACQUER

Barrett Varnish Company
1532 S. 50th COURT CICERO 50, ILLINOIS

a complete line of dependable industrial finishes since 1870

is no way of stabilizing the color of wood. For this reason, it is probably going to be necessary to establish new color standards about every three or four months. It is also desirable to keep all standards in an envelope or covered in some way so that they will not be exposed to light except when in actual use.

One other possibility would be to duplicate the color in a grained finish on metal which would eliminate the color variation of the wood.—*W. S. Robertson (Du Pont).*

I have talked to men of practical experience on this and several different suggestions are offered.

First and perhaps easiest is to select a good finished sample panel from each production run you make of the color and finish you want to keep uniform. Always retain and use the sample from your last run; if these last samples are not allowed to become old—that is if no more than two or three months time elapses between runs—and if the samples are kept cool, dry, clean and in no direct sunlight (preferably in subdued light), there will probably be no discernible change in their color.

As everyone knows, after a wood surface has been finished, a gradual change in color (sometimes very slight, to be sure) occurs over a period of time. With some woods and some finishes the change is much more rapid and pronounced than in others. Exposed to bright sunlight the color may change within a few days. The natural stain in black walnut wood is powerful and is inclined to affect any light natural or bleached finish that may be put on the wood.

In this connection one man suggests that you make your master sample panel of willow, finishing it to match the light walnut finish you are using. He contends that willow will not change color as quickly and as much as walnut.

Another man suggests that you duplicate your light walnut finish, graining and all, on a panel of rust-proofed steel or a panel of glass, bake the finish and then keep this sample in an envelope except when using it to match colors. This plan isn't an easy one to follow and, of course, a slight change of color may occur in the finish anyway—probably after a longer period of time.

A practical finishing foreman of long experience in matching colors declares that you can duplicate the exact color tone of your desired finish by using the same materials in exactly the same proportions and following the same methods as used on a previous run. There you are, Mr. X.; take your choice.—*Editor.*

Heat Resistant Finish

This laboratory desires information about any heat-resisting paint or finish for wood and metal, or wood alone, which you might have or could produce.

We are in search of and in great need of a paint or finish that will withstand a temperature of 400° to 500° F., stand up under changes in humidity, give a very smooth surface on polishing, require no baking, and that may be applied to both wood and metal. It should perhaps be pointed out that the duration of time this finish will have to stand the required temperature of 400° to 500° is only a matter of 5 to 10 seconds, but that the required temperature, which is a temperature increase due to air-friction, may be reached within three seconds. Also, since the surfaces to be finished may be laminated, any cure that requires prolonged baking might cause dimensional instability.

The wood being used is top grade, kiln-dried mahogany. All paint and finishes which we have tested to date,

It's **O'BRIEN** *for*
finest in furniture
lacquers and sealers

O'Brien technical and laboratory facilities are available to help you speed up and improve your furniture finishing.

O'Brien manufactures *furniture lacquers* in both regular clear and non-yellowing, water-white types—as well as pigmented, in varying sheens from dead-flat to super-high lustre. These lacquers produce a rich, beautiful finish that's tough, flexible, mar and alcohol resistant. They have exceptionally high cold check resistance, are formulated for room temperature or hot spray application.

For further information or for cooperative research on your finishing problems, write Industrial Sales Division, *The O'Brien Corporation, South Bend 21, Indiana.*

O'BRIEN
INDUSTRIAL Since 1875 FINISHES

in attempting to arrive at some solution, have either blistered or become soft, or both, with the possibility of a viscous flow of the paint itself.

Any information or suggestions you may offer will be greatly appreciated and tested. We would be interested in the method of best application, the best method of smoothing up, the recommended film thickness (coverage of about 1½ to 2 mils would be the maximum desired when dry) and any other information you may wish to furnish on any material recommended. If possible, we would like to have working samples of suggested materials forwarded.—*R. P. M.*

We are not sure which company, if any, can supply a material that will meet your requirements, but are submitting, in a letter, the names and addresses of several firms, one or more of which may have something to offer. Does some reader have any suggestions?—*Editor.*

Masterson, Sales Manager for Du Pont in K. C. Region

The Du Pont Co.'s Finishes Division has established a new Kansas City sales region, with headquarters at 4010 Washington St., Kansas City, Mo. James Leo Masterson, formerly Cleveland regional sales manager, has been appointed sales manager of the new region.

The Kansas City region, heretofore served by the Chicago regional sales office includes Missouri, Southern Illinois, Central and Western Iowa, Kansas, Nebraska, Colorado, Wyoming, and Montana east of the great divide. The office will handle the full line of Du Pont's trade, industrial, and automobile refinishing paints and finishes.

Assisting Mr. Masterson will be Frank P. Smith, formerly industrial sales supervisor in the Cleveland office, as industrial sales manager; Paul F. Hessler, formerly trade sales supervisor in the Cleveland office, as trade sales manager; William F. Pritchett, formerly branch manager of the refinish service warehouse in Detroit as refinish sales manager; and William A. MacRobert, formerly assistant office manager of the Chicago office, as office manager.

DeVilbiss Distributor Signs

The DeVilbiss Co., Toledo, Ohio, manufacturer of spray painting equipment, in urging distributors and jobbers to tie in with the company's national advertising, is now supplying them with a new plastilux fluorescent sign, decals and counter cards as identification material.

For distributors' and jobbers' salesrooms.

The new signs and cards carry the same logos as are being used in the company's national advertisements.

The fluorescent signs are designed for use in windows and display rooms or at sales and parts counters

Homer Lange, advertising manager of DeVilbiss, said the sign was selected because of its versatility and adaptability to meet the great variety of uses in distributors and jobbers salesrooms throughout the United States. The sign, he added, is economical to operate and can be easily serviced and maintained.

DeBURGH FEATURES:

PRODUCTION CONTROL —
which can only be attained by a powered-timed system.

A TIMED SYSTEM —
that permits more or less time to an individual item.

DRIERS —
used in conjunction that automatically control temperature and humidity—assuring standardized finishing regardless of weather conditions.

ELIMINATES ALL UNNECESSARY HANDLING

FACILITATES WORK FOR OPERATORS—
whether spraying-sanding-wiping or other activities.

***CLOSE PACK —**
saves conveyor length-size of drier and floor space—also reduces heat required.

INVESTIGATE—*No charge for estimates*

DeBURGH CONVEYORS

For Assembly, Finishing and Upholstery

1741 K St., N. W., Washington 6, D. C.

*Patents Pending—U. S. and Foreign Patents Issued and Pending

ROCKFORD WRINKLE FINISHES

ATTRACTIVE ONE-COAT COVERAGE FOR METAL PRODUCTS

Machines — from sewing to adding . . . boxes — from tackle to lunch . . . and hundreds of other metal products look better and stay better looking with Rockford *Wrinkle* Finishes.

In these quality-controlled specialty finishes you get complete, economical one-coat coverage even including metal imperfections and blemishes; a tough, durable protective surface; and a distinctiveness that puts more life into metal items.

Whatever your requirements, drop us a line and we'll comply promptly with a solution to your wrinkle-surface problem. If you have an Army or Navy contract calling for wrinkle finish, we can work with you to help meet rigid AN specifications.

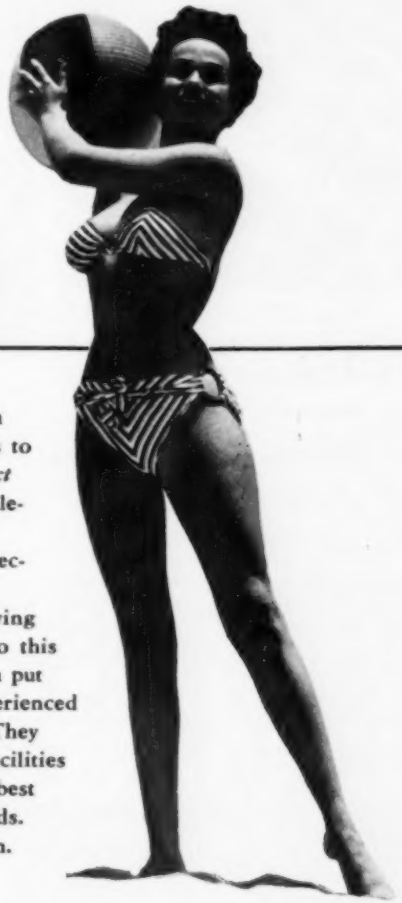
Research, Quality, Service

ROCKFORD VARNISH *Company*
ROCKFORD, ILLINOIS

Manufacturers of Protective and Decorative Coatings

Affiliate
GORDON BARTELS CO.
Roller Coating Specialists

motivating



An important factor which motivates prospective buyers to choose a product is the *correct finish* . . . a finish which complements design . . . accentuates detail . . . yet serves as a protective coating.

If the finish you are now applying to your product does not do this two-fold job, we suggest you put your problem up to our experienced technicians for a solution. They have the know-how and facilities to produce the type of finish best suited to your particular needs. Write for further information.

Research, Quality, Service

Affiliate
GORDON BARTELS CO.
Roller Coating Specialists

ROCKFORD VARNISH *Company*
ROCKFORD, ILLINOIS
Manufacturers of Protective and Decorative Coatings

Materials Supplies Equipment

New Spray Gun Blends Paint and Catalyst to . . . .

A new type spray painting gun has been developed by the Binks Mfg. Co. for the application of the recently developed epon resin paints. A catalyst is mixed with this paint a split second before it strikes the surface.

The blending of the paint and the catalyst is accomplished with a dual-feed head on the gun. Because of the rapidity with which the paint sets up after the catalyst is added, the two are blended after they leave the gun. Correct balance between paint and catalyst is of utmost importance and it is on this point that the new Binks gun is outstanding.

This view clearly illustrates the feed system of Binks new type spray painting gun. Catalyst flows through the hose at the right; it never enters the gun proper. The central hose carries Epon resin paint while atomizing air enters the gun through the hose at the left.

The spray gun is essentially a heavy-duty production gun with the precision catalyst feed system added. The exterior location of the catalyst nozzles lets the operator keep an eye on the flow of catalyst.

The hook-up for the catalyst painting system consists of the gun, an air line, and lines for paint and catalyst; two pressure tanks (one for paint and

This view shows a typical set-up for connecting Binks new type spray painting gun to the tanks for supplying paint and catalyst. The tank with the pressure gauge holds the Epon resin paint; the other holds the catalyst. Notice the hose connecting the two material tanks. Because of this joint connection, the air pressure in each tank is identical—an important factor in maintaining a correct balance in the flow of paint and catalyst.

FUNCTIONAL FINISHES ! !

If you require your coatings to accomplish some specific task—something beyond mere ornamental appearance or average longevity—

TRY US!

We make ACRYLIC, ALKYD, CELLULOSIC and VINYLOID coatings for a very wide range of specialized industrial applications.

THE VARNISH PRODUCTS COMPANY
5206 Harvard Avenue **Cleveland, Ohio**

NON-INJURIOUS **ELECTRO** NON-INFLAMMABLE

COLD STRIPPER

FASTEST *in Action* **LOWEST** *in Price*

WRITE FOR TESTING SAMPLE OR ORDER
5-GALLONS AT DRUM PRICE

Specify whether dip or brush type is desired

Allied Finishing Specialties Co.
2641 W. Grand Ave. • **Chicago 12, Illinois**

one for catalyst), and gauges and fittings. To assure a correct feed-ratio of catalyst to paint, the same air pressure is used on both the catalyst and paint tanks. All fittings in the system have standard pipe threads to speed hook-up and transfer of equipment.

According to a leading paint company, remarkable results have been obtained, using this catalyst painting system on exterior steel structures exposed to abrasion, weathering and air-borne chemicals. And there are indications that the applications for the new air-dry coating will rapidly expand to include marine, farm and other maintenance uses. For further information of the special spray equipment required for this new process, write to the Binks Mfg. Co., 3122 Carroll Ave., Chicago 12, Ill.

Heavy-Coat "Corrosion" Paint Sprays New Way

"Nu-Pon A", an important new finish announced by The Glidden Co. of Cleveland, Ohio, resists the attacks of chemicals, corrosion and moisture. One finish coat does the work of four and five coats of paint previously used for most exterior maintenance finishes required to withstand extremely adverse conditions. The resultant film is extremely thick yet flexible, hard and abrasion resistant.

Initial use of the new finish was in the chemical industry to protect huge metal tanks from the ravages of their contents, weathering, and air-borne chemicals. Field tests indicate that it stands up remarkably well.

The resin base for the new finish was first discovered from petroleum products. Glidden researchers soon recognized possibilities of the new material, and from it formulated their Nu-Pon line. They have found extensive use for it in baking base coats or primers used on appliances.

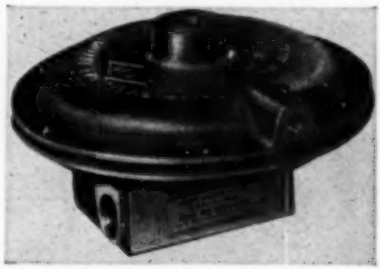
Later, a catalyst was discovered which, when used with a modified Nu-Pon finish, permitted a chemical change called "polymerization" to take place at normal air-drying temperatures and thereby made this revolutionary finish adaptable to field maintenance.

A new kind of spray gun was developed for its application, and Nu-Pon A was on its way toward changing the maintenance finishing of metal. The new "gun" employs the use of two fluid feeds—one for Nu-Pon A, the other for the newly-developed catalyst. With the specially-designed gun, the two materials are mixed in the air, and the resultant paint begins to cure as it strikes the surface being finished.

This quick-setting feature allows the building up of a single finish coat of Nu-Pon A to a thickness of more than 10 mils without running or sagging whereas ordinary finishes are applied to a thickness of approximately one to two mils.

Dewey Safety Air Flow Switch

The Dewey Safety Air Flow Switch is standard equipment with most of the largest oven manufacturers throughout the United States. It operates on both positive and negative pressure and is also used extensively in connection with safety shut-off valves



An important safeguard where gas is used.

ARCO PAINT *Quality* TAILORED-TO-THE-JOB!

Youngstown Kitchens—Mullins Manufacturing Corporation

CAREFREE AS A WHISTLING KETTLE. That's life with kitchen equipment and appliances finished with Arco Paints. That's because Arco builds in that extra measure of resistance to acids, alkalis, scuffing and abrasives. And that's why leading manufacturers insist upon Arco's fine product finishes. This tailored-to-the-job research is available to you... for finishing your products or maintaining your plant properties.

Paints, Lacquers, Varnishes, Enamels, Protective Coatings

TRADE-MARK

ARCO PAINTS

Quality... SINCE 1881

TESTED FIRST TO LAST!

THE ARCO COMPANY, CLEVELAND 27, OHIO

ARCO COMPANY OF CALIF. LTD., LOS ANGELES 1, CALIF.

that shut off fuel in the event the pressure of the fuel drops below a selected minimum. It protects against the following:

1) Opening of fuel valve until circulating fan is up to speed.

2) Explosion because circulating fan or burner blower has purged furnace before fuel valve opens.

3) Danger due to extreme slowing up, or stopping of fan, by automatically closing fuel valve.

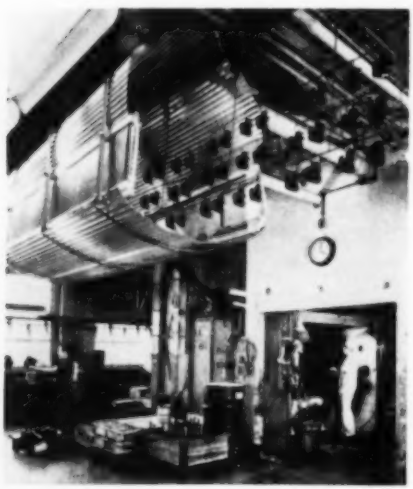
4) Spoilage of material in process; by flashing a danger signal if fan or fuel stops.

5) Pre-Ignition, when electric fuel igniters are used.

6) Low liquid level in open tank heaters, fired by gas power burners.

7) Danger from gas fuel failure when used in connection with safety shut-off valve.

The Dewey Air Flow Switch is a product of the Dewey Gas Furnace Co., 101 E. Baltimore Ave., Detroit 2, Michigan.



Bakes paint on 22,000 separate meter parts in an 8-hour shift. Photograph, courtesy of E. L. Wiegand Co., Pittsburgh, Pennnsylvania.

Airless Atomization; Spraying Without Comp. Air or Steam

On September 26, in Cleveland, Ohio, Mr. James A. Bede, President of Bede Products Co., 1110 Brookpark Road, unveiled, explained, demonstrated and answered questions about his latest development in paint spraying technique—Airless Atomization. In Bede's AA system, spray guns are used, but not compressed air, steam, electrostatic attraction, or centrifugal force.

What makes airless atomization possible, as Mr. Bede has developed it, is hydraulic pressure and high heat; the coating materials can be sprayed manually or with automatic equipment.

The new system uses steady fluid pressure (produced by a special pump) of 300 to 600-lbs. per square inch and heat (produced by an electric heater) of 160° to 220° F.

Atomization is accomplished through a small nozzle in the spray gun. The key factor to the whole idea is heat, which accomplishes two things. First, the viscosity of the material is lowered . . . . Second, at the high heat a fairly high vapor pressure is generated. The boiling point of part of the solvent content of the material is exceeded, but because the system is under pressure no actual boiling takes place. Therefore, as the material is released through the atomizing nozzle, the release of vapor pressure further breaks up the paint particles.

In effect, the system utilizes the solvent content of the paint as an atomizing agent. However, enough solvent remains in the finish to permit a good flow out. *It is this utilization of heat that has made the process practical.* The entire process, plus some of the special equipment, is fully covered by patent applications.

Practically all materials can be sprayed if they will tolerate the high

heat. In some cases, it may be necessary to re-adjust the solvent formulation in a material to make it perform properly with this process.

A supply line and return line of hose connects to each spray gun near its nozzle to allow material to circulate when the pump and heater are in operation. The hose and all connections and accessories are designed and made to stand much greater pressure and heat than can be generated by the equipment used.

A few of the merits of airless atomization in the spraying of coating materials, according to Mr. Bede, are:

1) Less waste of paint by overspray (perhaps as low as 3% to 5%).

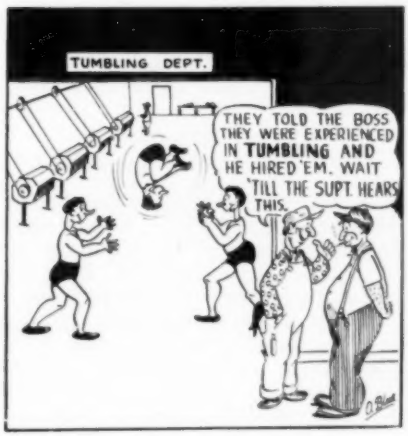
2) Less air exhaust requirement at spray booth or spraying area; less movement of air over work sprayed (air exhaust may be cut down to one-tenth of what is generally used); no paint overspray is blown outside; only sufficient ventilation and exhaust are needed to remove solvent vapor and fumes incidental to spraying paints.

3) No rebound of spray into operator's face when spraying inside concontainers or enclosure.

4) The viscosity of the material and the film thickness produced can be closely controlled.

5) Spray operation is simplified. In the Airless Atomization there is nothing for the operator to adjust. He simply pulls the trigger and points the gun.

The spray produced at the demonstration in Cleveland looked perfect to those who saw it. This new development has many interesting possibilities for use in industrial product painting and also in maintenance painting.



Temporary Protective Coating That Stands Baking

P&S Blue Tempkote No. A-8334 is designed as a tightly adherent, protective coating (temporary) for use on alclad, anodized aluminum and stainless steel.

This coating can be put on by dipping or spraying; it air dries in ten to 15 minutes. The resulting film will withstand oven baking (not over 30 minutes at 250° F.) and/or severe forming and fabricating operations. The coating can be stripped off the metal by a 10-minute dip in a solution of 1% synthetic detergent and water, at a heat of 90° F., or a 3-minute dip at 120° F.

The material is a product of Pierce & Stevens, Inc., 710 Ohio St., Buffalo 3, New York.

Cleans Aluminum Safely

Oakite Products, Inc., manufacturer of specialized cleaning and allied products, announces the development of Oakite Composition No. 80-A, a material designed for use wherever an excellent cleaner offering a high degree of safety to aluminum, tin or other soft metals is required.

The new cleaner has wide applica-

RIGHT ON THE LINE

on your
Government Specs

There's only one way to bait the hook to land the right finish—whether to meet government specs or your own production schedules . . . and that is with specialized experience . . . scientific skills . . . laboratory facilities . . . production know-how. We have them all. Try us and see.

- Lustreless, semi-gloss lacquers
- Wrinkles
- Primers
- Thinners
- Specialty Products

Duralac Chemical Corp.
84 LISTER AVE., NEWARK 5, N. J.

tions on a broad variety of work in aircraft and metal plants where exceptional cleaning ability and thorough safety in use are essential. Material may be used in soak tanks or pressure spray washing machines, is readily soluble in hot water, rinses easily with hot or cold water. It does not exhibit any tendency to foam excessively, it is claimed.

Additional information regarding this material, plus data on the preparation of solutions, recommended concentrations, methods of application, etc., will be sent without charge to readers writing on company letterhead to Oakite Products, Inc., 132F Rector St., New York 6, N.Y.

Floor Resurfacer Works Fine

Dangerous, worn floors can be given a smooth jointless surface with Flexrock . . . . developed to withstand the heaviest industrial use; combines the durability of concrete and the flexibility of wood. A ½-in. topping of this material provides a new surface; non-dusting and fire-resisting; withstands vibration and will not splinter, warp or crack; is warm and easy on the feet. Application is easy and floor is ready for use overnight.

There are five colors plus natural to choose from. Write Flexrock Co., 3600-T Filbert St., Philadelphia 4, Pennyslvania.

Ultra-Violet Ind. Inspection

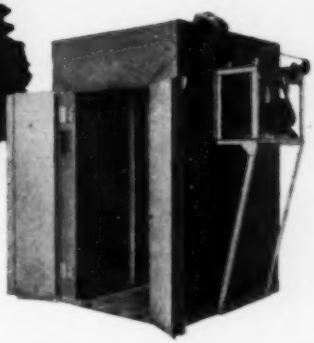
A new Blak-Ray ultra-violet source, designed specifically for industrial fluorescent inspection, is announced by Ultra-Violet Products, Inc., 145 Pasadena Ave., South Pasadena, Calif.

The principle of fluorescent inspection is based on the fact that many substances, when activated by ultra-violet energy, emit a visible glow which is called fluorescence . . .

For Quality Baking at Low Operating Cost

you can count on

GEHNRICH OVENS



★ Standard recirculating type.
★ Electric, gas, oil or steam heated.
★ Bench, cabinet and truck loading models.
★ Efficient, uniform controlled baking or drying of finishes.
★ Broad range of sizes.
★ Prompt shipments.
★ Write for catalog.

Also all types of batch and continuous conveyor ovens; dip tanks; roller coaters; trucks, etc. to your requirements.

W. S. ROCKWELL COMPANY
2782 Eliot St., Fairfield, Conn.

Fluorescent inspection is proving valuable in the detection of flaws in metal castings and machined parts, and in the determination of complete coverage where transparent or hard-to-see sprays, fillers, and coatings are applied on wood, rubber, plastic, and metal. It is also useful when looking for the "invisible" code and number markings on fabrics and many other materials.

The new industrial-type Blak-Ray Model XXX-40 covers an area of 20 to 40 square feet with intense (non-injurious) long wave ultra-violet radiation. The fixture is dust-proof and vapor-proof, with a spectral-finish aluminum reflector for maximum ultra-violet intensity. Three 40-watt tubes are used which are made of a new self-filtering glass that increases the fluorescent response to the point where inspection operations can be handled in a normally lighted area.

Cold-Dip Dye Adds Brilliant Color to Metallized Plastics

How Rez-N-Dye cold-dip dye is being used by the industrial world to impart color to metallized plastics is described in a data sheet available from Schwartz Chemical Co., Inc., 326 W. 70th St., New York 23, N. Y.

After the plastic product has been metal coated and lacquered, a final quick dip in Rez-N-Dye adds brilliant color in seconds, according to the manufacturer.

A gleaming gold appearance can be obtained by dipping the previously plated object into yellow Rez-N-Dye. Other Rez-N-Dye colors can be used to impart a copper, antique or pastel effect.

The data sheet points out that the cold-dip dye requires no heat or dilution and is available in 22 transparent colors.

BARRETT "FILWHIRL" ENAMELERS make easy work of many difficult coating problems

The Barrett Centrifugal Enameler

The Barrett "Filwhirl" Centrifugal Enameler provides a sure, clean and economical method of applying enamel or lacquer to parts or products that can be rotated. It saves coating material, time and expense. It is designed for bulk handling, and speedy production requirements.

It has proven highly successful in coating helical springs, clips, clasps, zipper parts, bead and link chain, toys, automobile and luggage hardware, misc. metal stampings, castings, etc. Good results are obtained with japan, lacquers, varnishes, paints, waxes. No drips or fatty edges.

Furnished in spindle post, fixed bowl, and carrier types, in several capacities. Safety features included and auxiliary equipment is available.

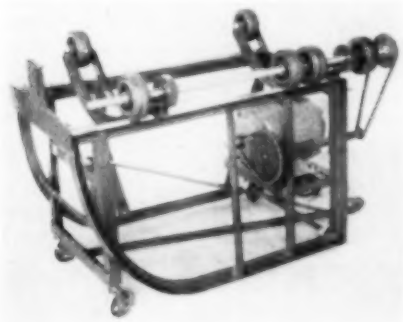
Send a few representative samples to be processed and submitted for your examination.

THE LEON J. BARRETT COMPANY
Designers and Builders of Centrifugal Machinery
1703 GRAFTON ROAD WORCESTER 1, MASS.

Morse Portable Drum Rotator

Structural improvements in the Model No. 200 Portable Drum Rotator are announced by Morse Mfg. Co., Syracuse, N.Y. Designed to agitate or mix drum contents up to 500 lbs. in 30 to 55-gallon drums, the new rotator has been strengthened by a second horizontal steel brace which gives additional support to the idler wheels.

The position of the drive motor has been reversed to allow the idler reduction sprockets to be located inside the framework of the unit. The change in motor position and a new reinforcing vertical brace provide greater stability to the idler jackshaft.



Rotates partly or completely filled drums.

Steingetz System of Dipping

A revolutionary new development of an automatically controlled, conveyorized dipping process for quantity production of baked enamel and lacquer finishes of metal parts for industry, is announced by Edward Goldstein, president of the Apex Stamping Co., 70 Marshall St., Newark, N.J.

As a result of this new development, known under the name of the

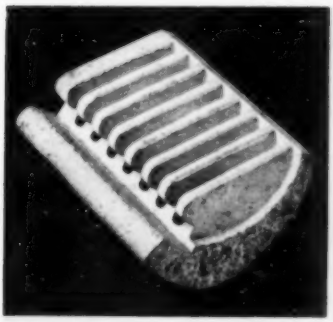
Steingetz System, the paint loss which runs up to as much as 85% in the conventional spray method for enamel finishes, has been eliminated. The Steingetz System has been licensed exclusively to the Apex Stamping Co.

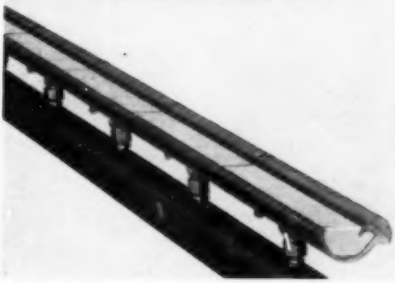
In addition to the elimination of the paint loss, the Steingetz System provides for controlled uniformity, complete overall coverage, thorough baking, and the elimination of all drip and tear marks.

New Burdett Line Burner

A recent announcement by the Burdett Mfg. Co., originators of the "Radiant Heat" principle for use in industrial ovens, discloses the development of what is said to be a more flexible and efficient adaptation of the Burdett principle.

Burdett engineers claim to have





Burdett's "Radi-Heat" line burners.

New from Versatal! Designed to keep your paint production lines running smoother, more productively and at less cost than ever before! SPRA-KING lets you pump and spray from original containers. Pumps adequate paint for 3 or 4 guns through hundreds of feet of pipe or hose. Saves you hours on make-ready. Eliminates costly down-time, pressure loss, gasket trouble. For time-cost comparisons, complete details, see your Versatal representative now, *today*.

SPEEDS PAINTING 5 WAYS!

1. Refills Without Shutdown!
2. Agitates Paint While Pumping!
3. Has Built-In Air And Material Controls!
4. Handles 1 to 5 Gallon Containers!
5. Brings New, Greater Safety!

A PRODUCT OF SW SPECIALTY PRODUCTS

Rolls To The Job —Anywhere!

SPRA-KING Model 7830-A (complete with dolly) brings you a fully portable power painter! See it!

ALEMITE Versatal SPRAY PUMP EQUIPMENT

BOOKS
On Finishing Available

"MODERN ORGANIC FINISHES—Their Application to Industrial Products" (452 pages) new $8.50

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"FURNITURE FINISHING" (543 pages) 5.00

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"WOOD FINISHING" (361 pages) 3.00

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"PRACTICAL COLOR SIMPLIFIED" (128 pages) 5.00

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"PAINT & VARNISH TECHNOLOGY" (509 pages) 8.00

"METALLIC AND NON-METALLIC COATINGS FOR GRAY IRON" (76 pages) 1.75

"PAINT FILM DEFECTS — Their Causes and Cure" (544 pages) 12.00

"INDUSTRIAL SOLVENTS" (764 pages) 12.00

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produced, under the name of "Radi-Heat", an entirely new concept of design incorporating several important advances. Among these advances are: maximum rate of heat transfer; complete combustion, with resulting fuel economy; process time greatly reduced; maximum uniformity of product; and minimum low cost maintenance.

The wide fanning radiation of the refractory is accomplished by the open-faced design, which can be used in any desired length by the end-to-end mounting of the sectional burners on a common manifold.

Complete details may be had by writing to Mr. D. C. Scheele, Sales Manager, Burdett Mfg. Co., 3433 W. Madison St., Chicago 24, Illinois.

Fire Protective Transfer Pump

Designed for complete safety from the bottom of the suction tube to the top of the discharge nozzle, the new Protectoseal transfer pump gives effective protection against explosion and fire hazards in the movement of

Pump transfers hazardous liquids safely.

RONCI SPEEDIP WHIRL ENAMELER

Made in Two Sizes, R-100 and R-200 Capacity 312-cu.in. and 1206-cu.in.

IDEAL FOR LACQUERING AND ENAMELING SMALL PARTS UP TO 7-IN. IN LENGTH

CUTS COSTS, SAVES UP TO 80% OF MATERIAL

Carries up to 75-lbs. per load, and up to 30 loads per hour can be coated with lacquer or enamel in these machines.

All operations are within the machine. Dipping tank is raised, submerging the parts in the basket, and then lowered and the parts whirled, throwing off excess material. No additional outside tanks required; no cleaning necessary when changing colors; no loss of material.

Prompt Deliveries

Write for further information and submit samples to be coated.

RONCI MACHINE COMPANY

A Division of F. Ronci Co., Inc.

2 ATLANTIC BOULEVARD CENTREDALE 11, R. I.

hazardous liquids from receiving drums to use containers.

Three flame arrestors are built into the pump and are an integral part of it. These are placed at the points necessary to prevent an explosion of vapors—at the spout, above the bung adaptor, and at the strainer inlet within the drum. In addition, the pump provides for vent and pressure relief through protected openings. Every detail of design and construction has been made to secure safety for the operator as well as the building in which the transfer is made.

The pump is self-priming and is constructed of special aluminum alloy with a brass telescopic tube for strength, durability, light weight and resistance to corrosion. It is quickly and easily attached to the drum by hand swivel grip connectors. The telescopic tube permits pumping from either the side or end opening of 30-gallon or 55-gallon drums. Pumping speed is five gallons per minute—fast enough for filling small containers, yet sufficiently slow to prevent sudden overflows. It is supplied complete with spout containing threaded hose connection, bung adaptor and telescopic suction tube. Tested and Approved by Underwriters' Laboratories, Inc., and Associated Factory Mutual Fire Insurance Companies.

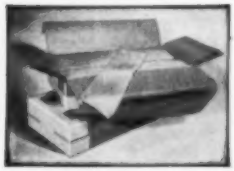
Manufactured by Protectoseal Co., 1920 So. Western Ave., Chicago 8, Illinois.

Dr. J. S. Long is Honored

Dr. J. S. Long, chemical director of Devoe & Raynolds Co., Inc., has been approved by the Division of Chemistry & Chemical Technology of the National Research Council, to be one of three U. S. representatives to the International Union of Pure & Applied Chemistry. The three men will form a Commission for Organic Coating Materials and represent America in international aspects of pure and applied chemistry dealing with protective coatings.

NOW! Tack Cloth in Handy Rolls *or* Cut Bulk

Cut off any size piece and use as needed.



Already cut and folded, ready to use.

Now you can get Tack Cloth packed the way it's easiest for you to use—either in 150 yard rolls of 36" wide cloth or in handy cartons—100 or more Tack Cloths to the carton.

No matter which way you buy it, you can be sure that every square inch will stay SOFT and TACKY until the very last bit is used up.

The Cut Bulk size is 18" x 36"—folded to 4½" x 18" for easy handling. **All of our Tack Cloth is Spontaneous Combustion-Proof, Lint-Free and Wax-Free.** It's clean and sanitary—there's no waste.

Write today for complete information, prices and samples.

Bond Chemical Products Company

(Formerly Baughn Chemical Products Co.)

"The Tacky Wiper Specialists"

2641 N. CLYBOURN AVE. CHICAGO 14, ILL.

Also Individually Packed in Glassine Envelopes —144 to the Carton.

A WARRANTY OF SATISFACTION IN EVERY CARTON

Pressure Sensitive Stencils

The development of the "Spray-It" pressure sensitive stencil for reproducing lettering, designs, insignias, etc., with any standard spray gun is announced by the Demp-Nock Co., 21433 Mound Road, Van Dyke, Michigan. This entirely new stencil is furnished die-cut and ready-to-use per customer specification. It will be of interest to fleet operators, railroads, aircraft manufacturers and others who have lettering problems.

Phosphate Coating Shells

The question of How to Apply a Phosphate Coating to Shells at a low cost is answered at this year's National Metal Show in Philadelphia, October 20-24. The large exhibit of Frederick B. Stevens, Inc. features a Stevens Full Automatic Barrel Plating and Processing Machine in constant operation.

Shells are passed through various cycles of the phosphating operation just as they would be in an actual defense plant operation. The exhibit includes a conveyor that returns the shells, after they have been automatically unloaded. At no point is a worker required to lift, carry or handle any of the material being processed. This exhibit reveals the final word in "Automation" for most plating and processing operations.

American Chemical Paint Co.'s New West Coast Plant

The American Chemical Paint Co., Ambler, Penna., announces that it has acquired office and plant facilities on the West Coast and expects to be operating there about the first of November.

The new ACP plant is located at Niles, California—about 25 miles southeast of San Francisco. Present plans include the production of metal-working chemicals (rust proofing and paint-bonding phosphate coating chemicals, pickling acid inhibitors) and agricultural chemicals.

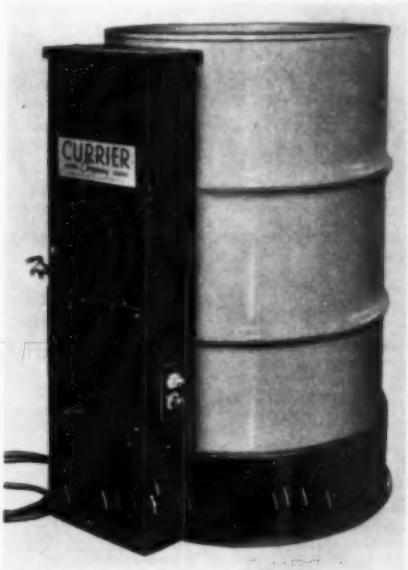
Heading up the Niles' ACP branch will be Mr. George H. Williamson, for many years associated with the American Chemical Paint Co. in a supervisory capacity at its Detroit, Michigan office. In addition, field representatives will provide technical servicing and consultation for ACP customers in the West Coast area.

Low-Cost Vapor Degreaser Uses Standard Drum

Known as the "Drum Major", an inexpensive vapor degreaser, using a replaceable standard 55-gallon steel drum for the cleaning tank, is now in production by Currier Co., 710—73rd Ave., Oakland 4, Calif.

The unit uses any of the modern vapor solvents for rapid degreasing and cleaning. Condenser and heating units are externally mounted, leaving the drum interior unobstructed and providing maximum work area. Electric heating elements are beneath the drum bottom, protected from caking or sludging in dirty solvent and from damage due to a dropped object in the cleaning tank. After long use, solvent can be recovered from accumulated sludge by simple distillation utilizing the unit's own condenser.

Thermostatic controls automatically maintain correct vapor level. No



Plugs into any 220-volt, 60-cycle A. C. Line.

CARL-MAYER OVENS

Carl-Mayer exclusive design and patented features ensure the most efficient operation and outstanding fuel economy. Many installations.

Write for Bulletin No. 350

Enamel Drying, Japanning, Lacquering, Ceramic Drying

THE CARL-MAYER CORP.
3030 Euclid Avenue Cleveland, Ohio
Over 30 Years' Experience

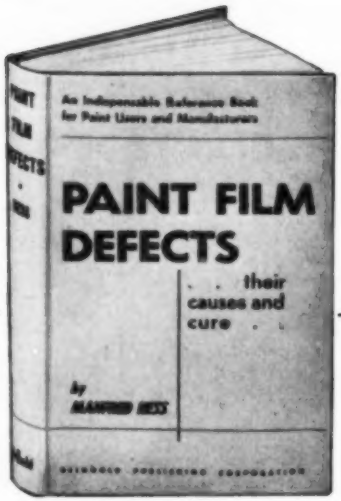
M&E MANUFACTURING COMPANY
PAINT SPRAY FINISHING SYSTEMS
INDIANAPOLIS 5, INDIANA

Yes. WE'D LIKE TO GET A COPY OF THE BIG NEW M & E SPRAY FINISHING EQUIPMENT GUIDEBOOK

M & E MANUFACTURING CO.
2569 Winthrop Ave., Indianapolis 5, Ind.

Please send (without cost or obligation) your M & E Finishing Equipment Guidebook.

Name_____
Title_____
Company_____
Street_____
City_____ State_____



HERE ARE enumerated in this remarkably valuable book of 544 pages, all of the common and a variety of unusual and seldom heard-of defects and objectionable features that occur in paint, varnish, lacquer and synthetic enamel finishes; their probable, possible or real causes given; the effects described, and means of preventing and remedying these troubles fully outlined.

Chapters deal with these defects and troubles as they occur, 1) during or as a result of storage and preparation of materials before finishing; 2) when the materials are applied by various production methods and equipment; 3) during handling, processing or drying after application; and finally, 4) when and after the finished goods are shipped, displayed, stored or placed in service.

Defects covered include many more than could be named here, but to mention just a few there are; runs, sags, tackiness, films, too thin or too thick, slow drying, orange peel, aligatoring, wrinkling, pimples in films, pin holing, cracking, blistering, lifting, bleeding, blushing, blooming, discoloration, rainbow effects, gloss and dull areas, grained appearance, and scores of others.

Practical information is also revealed in reference to safety precautions to prevent fires or accidents in paint shops and finishing rooms, skin troubles of workmen, poison from paint materials and fumes.

By referring to the "subject Index" of 84 pages in back of the book, it is possible to locate quickly, the answer to any particular failure, cause or remedy.

Price $12.00—Money Back Guarantee.

INDUSTRIAL FINISHING

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water connections are required; installation merely requires plugging in to a 220-volt, 60-cycle A.C. power source. Elements are rated at 3500 watts. Initial solvent charge requires five gallons. Drum is supplied with the unit, and may be replaced when necessary with any standard 55-gallon drum.

New York Woodfinishers' Has Three New Lacquers

Three new lacquers announced by New York Woodfinishers' Supply Co., Inc., 109 Imlay St., Brooklyn 31, N.Y., are as follows:

No. 979 is a clear gloss lacquer for wood. It has outstanding resistance to alcohol, most acids, and alkali; is available in colors as well as in clear.

No. 900: A clear gloss rubbing lacquer which is highly "mar resistant" and rubs easily to a beautiful smooth finish. Has high solids and unusual cold check resistance. Its toughness is an outstanding characteristic.

No. 208 Water White Lacquer is crystal clear, with excellent color retention qualities. Has high solids and rubs well. Its excellent adhesion makes it an asset in any plant that has use for such a material.

PAINT STRIPING TOOL

NEW EYE APPEAL FOR YOUR PRODUCT— LITTLE OR NO LABOR COST!

Amazing new Paint Striping Tool makes it easy to do expert striping. Paints straight, curved, circular or evenly spaced parallel lines simply and easily. Simply fill Tubular Glass Paint Fountain with paint or lacquer and Knurled Wheel Tip feeds paint evenly. Tips interchangeable — 1/64", 1/32", 3/64", 1/16", 5/64", 3/32", 1/8"—jaws split apart for easy cleaning.

Use For STRIPING

- FURNITURE
- TOYS
- BICYCLES
- BOATS
- SCOREBOARDS
- LAMPSHADES
- AUTOS
- SIGNS
- CERAMICS AND ALL PAINTED OBJECTS

DEALERS—MASTER PAINT STRIPING TOOL packed in display cartons of 1 doz. Fast, profitable seller. Write for illustrated circular, discounts.

WENDELL MFG. CO.
Dept. 9-S, 4234 N. Lincoln
Chicago 18, Illinois

MIX IN THE DRUM!!

- ★ Use supplier's drums
- ★ Reduce handling
- ★ Eliminate costly "clean-up"
- ★ Avoid contamination
- ★ Get fast mixing of solutions or powders

170C

USE "U. S." EQUIPMENT!!

- ★ Rugged and dependable
- ★ Load and unload quickly
- ★ Handle variety of drums
- ★ Mix up to 500 lbs. per drum
- ★ Constant or variable speed drives

Write for Bulletin 265 TODAY

U. S. STONEWARE
AKRON 9, OHIO
PROCESS EQUIPMENT DIVISION

Harry C. Martin Elected V.P. of Carborundum Co.

Harry C. Martin, Director of Research & Development of The Carborundum Co., has been elected a Vice President of the company.

Mr. Martin's promotion is the outgrowth of the company's increasing emphasis on research of new products and processes. He will continue active direction of Carborundum's research and development activities and will serve as principal advisor to the President on all technical matters. Mr. Martin joined Carborundum's research laboratory in 1913.

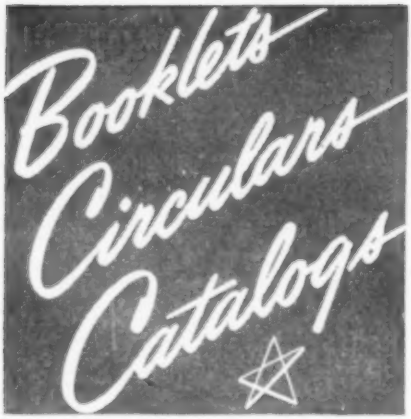
FOR SALE
Slightly used
"American" Self-Cleaning
CONTINUOUS
AIR FILTERS
Type S, No. 2999, 4-ft. x 12-ft.
George Koch Sons, Inc.
EVANSVILLE 4, INDIANA

DeVilbiss Spray Painting School in West Was Well Attended

Enthusiastic reports of results being achieved in spray painting on the west coast, as a result of the DeVilbiss Co.'s spray painting school at Santa Clara, California, were awaiting George I. Stoddard, instructor, when he returned to Toledo early in September, to begin regular classes at the company's main plant.

Mr. Stoddard instructed eight classes in spray painting over a 7-week period in a summer session of the DeVilbiss School which, he said, aroused considerable interest in the training on the West Coast. Classes were held at the University of Santa Clara and laboratory periods were conducted at the DeVilbiss Santa Clara plant.

Upon his return to Toledo, Mr. Stoddard was informed that one of the "students" was putting his newly-learned techniques to work. This "student" wrote that a drum of paint sludge used to be taken from his water wash spray booth each week, but since attending the school and gaining greater knowledge of spraying techniques, waste has been reduced to five gallons of sludge per week.



Polishing-Buffing Discs

Polishing and buffing discs of all kinds, lambswool bonnets, pads, mitts and other accessories for polishing and buffing on a production basis, are illustrated and listed in a new 12-page catalog put out by The Handy Sales Mfg. Co., Inc., 2343 Lakeland Blvd., Cleveland 17, Ohio.

Thermo Electronic Signaling Temperature Control

Thermo Electric Co., Inc., of Fair Lawn, New Jersey, has just published an 8-page Catalog Section 55 which illustrates and describes its new "Thermo Electronic" Signaling Temperature Controller and Resistance Bulbs.

Measures and Tests Coatings

A portable instrument for measuring the thickness of non-magnetic coatings on magnetic bases, and for detecting pinholes in non-conductive coatings on conductive bases, is described and illustrated in a 6-page folder offered by Branson Instruments, Inc., 430 Fairfield Ave., Stamford, Conn.

Torit Dust Collectors

To meet the requirements of heavy duty, continuous grinding and other high dust volume applications, the Torit Mfg. Co. of St. Paul, Minn., is producing several models of its dust collectors with hopper bottoms and special release valves. These are available in both cabinet and cyclone types.

Full information about these new Torit Dust Collectors and release valves may be obtained by writing the Torit Mfg. Co., 300 Walnut St., St. Paul 2, Minn.

"Everything for Safety"

A 144-page catalog entitled "Everything for Safety" is announced by The Boyer-Campbell Co., 6540 St. Antoine St., Detroit 2, Michigan. It describes face shields, helmets, "Skin-Cote" liquids and creams for protection against skin infections, safety clothing, etc.—everything required for a comprehensive safety program. A request on your letterhead will bring it to you without charge and postpaid.

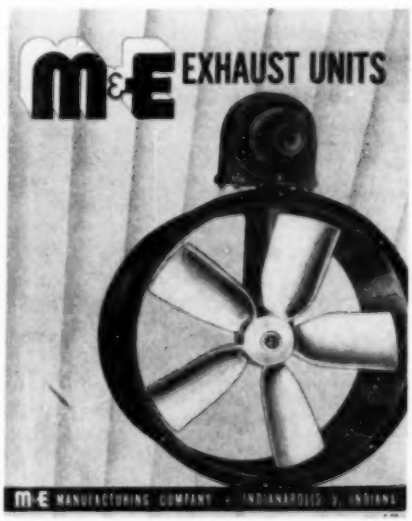
Explains Why Metals Corrode

Reynolds Metals "Technical Advisor" Number 19 carries the concluding section of a two-part article explaining the reason why metals corrode. Cathodic protection, which makes it possible to reduce or entirely prevent corrosion, is also explained.

The current issue of the "Technical Advisor" also carries the first article in a new series on "Finishes for Aluminum", taken from Reynolds technical manual on this subject. Reynolds Metals Co. is located at 2500 S. 3rd St., Louisville 1, Ky.

New M & E Fan Catalog Free

M & E Heavy-Duty Exhaust Units are available for taking care of practically any exhaust requirements, whether for removal of hazardous fumes and vapors or for general ventilation. The company's new Fan Catalog F-52 reveals the facts on M & E Exhaust Units . . . . tells how to select an exhaust unit and shows that



MARK YOUR PRODUCTS FASTER, AT LESS EXPENSE, and FOR GOOD!

ESTABLISH A SILK SCREEN DEPARTMENT IN YOUR PLANT. CHANCES ARE, SILK SCREENING CAN OFFER ANY FROM A DOZEN TO A HUNDRED WAYS TO MARK YOUR PRODUCTS JUST THE WAY THE HEADLINE SAYS. WE CAN SHOW YOU "HOW TO" SILK SCREEN **ELECTRICAL CIRCUITS, INSTRUCTION BOOKS, SHIPPING INSTRUCTIONS, DIALS, PANEL FACES, DECALS, ASH TRAYS,** AND A VERY BIG **ETC.** FOR INFORMATION, PLEASE WRITE Dept. I 55

The NAZ-DAR Company

461 MILWAUKEE AVENUE CHICAGO 10, ILL.

these units are built to meet the specific needs of industry.

M & E Exhaust Units have been accepted for advertising in Vol. II National Fire Codes, by the National Fire Protection Association. The new 12-page catalog contains application information covering the complete line of M & E Heavy Duty belt-driven exhaust units, available in sizes of 12 to 48-in. and delivering from 900 to 38,000 cubic feet per minute. Also described is the M & E line of Window Mount Units, Duct Mounted Exhaust Units, Roof Ventilators, Automatic Shutters, and Exhaust Piping. The catalog can be obtained free from M & E Mfg. Co., 2571 Winthrop Ave., Indianapolis 5, Indiana.

Treating Metal Surfaces

The various possibilities of using peroxygen compounds in the treatment of metal surfaces are outlined in a new bulletin No. 39 recently issued by the Buffalo Electro-Chemical Co., Inc., Station B, Buffalo 7, New York.

Peroxygen compounds useful in the treatment of metals are mainly hydrogen peroxide persulfates and peracids. These products have found use in treatments to improve the adherence of finishes to metal surfaces and to improve the appearance of finished articles by applying chemically produced surface films.

Arco Hot Spray System; Free Book About It

"The Arco Hot Spray System—How It Fits into Your Finishing Operation" is the title of an information-packed 12-page booklet from the Arco Co., 7301 Bessemer Ave., Cleveland 27, Ohio, specialists in paints and product finishing materials for industry.

Purpose of the booklet is to show the ease with which the Arco Hot Spray System—built around a simple paint-heating unit—can be inserted into existing spray systems or integrated with production-lines in the making.

In the Arco system a small hand-held heater is placed in the paint line at or near the gun; only the paint actually in use is heated; there is no recirculating system, insulated supply line or heating tank. Low-pressure steam or hot water is the heating medium. Because of the unit's light weight and its fixed position close to the gun, the heater can be used at any distance from the pressure tank.

The booklet's description of the Control-Temp heater and what it will do is in question-and-answer form. Sample questions include: What is the Control-Temp Heater? How does it operate? How is it handled? Answers to these and other questions are clear, detailed and easily understood. Large illustrations show two models of the heater: a small hand-held model for single-gun operation

Mac's FASHION SEALERS & LACQUERS

A specially formulated sealer for the first coat under clear gloss or flat lacquers provides a good body and sands easily. Also works well under varnish and enamel. A production test will prove its superiority.

MAC'S FASHION LACQUERS are available in clear and opaque for application to all kinds of surfaces. Spray easily and give good coverage in any desired sheen. Outstanding for clearness and attractiveness. **Do not get cloudy.** Write for a production test sample and descriptive folder.

The Lawrence-McFadden Co.

Headquarters for Fine Finishes Since 1875

7430 STATE ROAD "Our 77th Year" PHILADELPHIA 36, PA.

and a larger thermostatically controlled type for spray-booth mounting to supply heat to three or four guns. An accompanying schematic drawing graphically illustrates the unit's operating principle.

The Arco Hot Spray system is described as an "integrated" system, closely allied with the company's extensive line of special-purpose finishes especially developed for hot-spray use. Services of the Arco Research Laboratories and of specially trained technicians are offered to prospective hot-spray users.

Spray Booth Information Free, As Offered by DuBois

As a service to spray booth operators, the DuBois Co., manufacturer of industrial soaps and cleaners, is now offering a group of authoritative illustrated articles designed to help solve spray booth problems. Efficiency and economy are stressed.

In "Problems of Spray Booth Operation", author Samuel J. Miller, Chemical Director of the DuBois Co., covers booth design, waterwash booth compounds, skimming, foaming, purging booths, paint reclamation, bacterial growth in paint booths, and testing overspray for reclaimability.

"Developments in Spray Booth Operation", by the same author, takes up some of the new problems facing the spray booth operator: special phenolic baking varnishes, automatic concentration controls, and reclamation of enamels and primers.

A. Gulino, Manager of DuBois' Industrial Division, is the author of "My Paint Booth Worries Are Over"—a practical, concise guide to spray booth maintenance, including a tested check-chart that shows what to do daily, weekly, and monthly.

"Recommendations for Compounding, Marking and Purging of Wet Paint Spray Booths" contains specifications for the proper selection and use of DuBois' spray booth products—Klarifiant, Strypp, and Filmite.

All four pieces of literature may be obtained without obligation by writing the DuBois Co., 1120 W. Front St., Cincinnati 3, Ohio.

Metal Cleaning Bulletin by Despatch Oven Co.

A new illustrated bulletin on metal cleaning and treating equipment is offered by the Despatch Oven Co. The bulletin (12 pages 8½x11-in., printed in two colors) illustrates and describes typical Despatch washers, from single stage units for simple wash jobs to multiple stage machines for the preparation of

metal to receive the finest finishes. Several special layouts are shown and discussed to point out the versatility of Despatch equipment.

Space in the front of the Bulletin is devoted to a description of the engineering and manufacturing facilities of Despatch, and there is a section dealing with things to consider when selecting metal cleaning equipment. While the Bulletin is primarily devoted to the presentation of Despatch metal washing equipment, there are two pages illustrating complete finishing systems engineered, fabricated and installed by Despatch.

A copy of this Bulletin No. 68 may be had free by writing Despatch Oven Co., 619 8th Ave. S.E., Minneapolis, Minnesota or the Chicago Sales Office at 4554 N. Broadway, Chicago, Illinois.

Vinylite Resins Booklet

Additional data for paint and industrial coatings manufacturers on the wide compatibility of Vinylite resin VAGH with other film-forming material is presented in a revised booklet, "Vinylite Resins, Technical Release No. 6," (16 pages 8½x 11-in.) published by Bakelite Co., a Division of Union Carbide & Carbon Corp.

One of the newer modified vinyl chloride acetate copolymers, Vinylite resin VAGH has made possible many new types of fortified coatings. Adhering well to many other types of finishes, particularly to the vinyl butyral resin "wash primers," Vinylite resin VAGH has broad possibilities in the field of industrial coatings alone. A wide variety of plasticizers can be used with Vinylite resin VAGH because of its high softening range . . . .

Latest information on the basic properties of Vinylite resin VAGH and suggestions for its proper use are included in the revised pamphlet. Copies may be obtained by writing to Bakelite Co., a Division of Union Carbide & Carbon Corp., 300 Madison Ave., New York 17, N.Y.

50-Year Club of N.P.V. & L.A.

The Fifty Year Club of the National Paint, Varnish & Lacquer Association extends an urgent invitation to all executives, superintendents and salesmen, who will have served in our industry for 50 years and more, on or before our Convention, to join this Club.

All eligible members should be enrolled in the Club before our Chicago convention on November 17-19. There are no dues or assessments, as the Club is sponsored by your National Association.

The Fifty Year Club was organized in 1938. All veterans of the industry who are now members are enthusiastic and proud to be affiliated with this venerable institution of the industry.

Spe-de-way

WOOD BLEACH

This single operation, controllable, Patented Bleach

- **Requires No Neutralization**
- **Does Not Raise the Grain**
- **Leaves No Deposit**
- **Economical . . . Dependable**

Gallon Unit makes two gallons of bleaching solution. Application by spray or synthetic rubber sponge. Wood is ready for finishing in less than two hours.

Delivered prices quoted on request.

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Standard of the FINISHING INDUSTRY Since 1934
DETRO MFG. & SALES CO., CULVER CITY, CALIFORNIA

Random Comment on the Industrial Scene

(Continued from page 7)

bring many safety problems into better focus. The sessions have been attended by general foremen, superintendents and safety representatives. Future meetings will include motion picture films on such topics as "Fire Prevention."

* * *

Paper Tubing. Square, rectangular and radiused paper tubes ranging in size up to 9-in. on other side, and round tubes up to 9-in. inner diameter are now available. Production of these large-size tubes has been made possible through the use of special equipment.

Acetate overwrap on kraft and fish paper tubes, varnish dip, or resinite impregnation can be had for special applications where increased dielectric properties and unusually high resistance to moisture and corrosion are essential.

* * *

Resistant Wall Coating. A new protective, decorative and easy-to-wash coating for interior walls of public-type buildings is based on Vinylite resins and applied by spraying. This Vinylite resin-based coating resists moisture, mould and mildew, oils, fats, grease, ink, salt spray and most chemicals. Resistant also to abrasion and scuffing, the Vinylite resin-based coating increases in strength the thicker it is applied; thickness may vary without changing appearance of the coating, permitting extra protection for areas exposed to heavy wear.

Textures resemble rich leather grain, and colors can be matched for integration with general decorative color schemes. Repeated washing does not affect thickness or appearance of the coating, which is easy to clean with soap and water.

* * *

Rustproofs Steel. A revolutionary new process for the corrosion treatment of metals has been approved by the Chemical Warfare Service of the U. S. Army, automotive, aircraft and other industries. Discovered by Oscar B. Bach, industrial engineer, the Permyron process has been developed over a period of 13 years, and is now ready for industrial production.

The process consists of thermo-chemical treatment of metals, which gives high corrosion resistance to mild steel and other ferrous metals. Application requires a chemically clean surface which is treated hot under controlled conditions. The heat employed is not enough to temper and soften cold-rolled or other work-hardened steel.

* * *

Toys For 1952 are expected to top 1951 by at least 10%. It is estimated that this year sales will run from 370 to 400 million dollars, figured on manufacturers' prices. The increase is based on the rising number of children reaching the toy using age, and higher income throughout the Nation. The estimated child population is set at 45 million, and that is a lot of customers.

At a recent meeting, the president of the Toy Manufacturers of U.S.A., Inc., said, "A phenominal burst of summer orders has swamped production facilities. A number of concerns report that they are not accepting new accounts, and are six weeks or more behind in deliveries."

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Low Oil Warning. Oil-Mist lubricators with one-gallon oil reservoirs and built-in automatic warning switches which signal the operator by horn and red light, or shut off the machine as the oil level becomes too low, are announced by the Alemite Division of Stewart-Warner Corp. Oil-Mist units with 12-ounce reservoirs are also available with built-in warning switches. Introduction of these new Oil-Mist models further reduces dependence on the human factor in automatic oiling.

Far-Infrared Oven in Conveyor Line

A NEW far-infrared oven at the Foxboro Co., Foxboro, Mass., makers of industrial instruments for process, bakes paint on 22,000 separate meter parts in an 8-hour shift. Consisting of only four aluminum Chromalox radiant heaters and reflective aluminum sheeting, the light weight oven is conveniently located overhead to save valuable floor space.

All colors of paint are baked at about the same speed, using the far infrared heaters. No slow-up is necessary to accommodate light colors. Since the radiant heat is directed and reflected into the work rather than convected around it, it has not been necessary to close the ends of the oven.

A flexible conveyor system permits easy handling of both large and small parts. Small items are hung on frames with three tiers, while larger ones are attached directly to the main conveyor hooks.

Total installed capacity of the oven is 14.4-kw. on a 230-volt line. Conveyor speed is 4½-ft. per minute.

Shell Chemical Corp. Elevates Huldrum and Irvine

Mr. G. W. Huldrum, Jr., has been appointed Sales Manager, Eastern Division, of Shell Chemical Corp., and Mr. V. C. Irvine has been named Western Division Sales Manager.

In his new position, Huldrum will supervise all sales activities east of the Rocky Mountains for Shell's solvents, resins and plastics, and industrial chemicals. His office will be at 500 Fifth Ave., New York City. Irvine will head sales activities in ammonia and ammonium sulphate, solvents for varnishes and lacquers, plastics and resins, and industrial chemicals west of the Rockies. Headquarters for Irvine will be at 100 Bush St., San Francisco, Calif.

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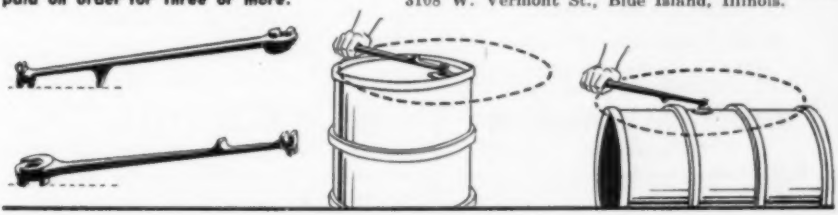
It fits all sizes and designs of caps or plugs which close the openings in steel drums. Positive grip without slipping. Guaranteed not to break. William C. Richards Co., P. O. Box 155, 3108 W. Vermont St., Blue Island, Illinois.



Industrial FINISHING Editorial

Old and Reliable but Alert and Progressive

Often we hear of a business house or industrial concern referred to as "an old and reputable firm". In many cases this is an excellent recommendation, for certainly length of service indicates stability, experience and knowledge. However age and stability are not always enough to maintain an excellent reputation, and to attract and hold profitable customers under modern conditions.

Management must have experience and knowledge, but it must constantly be receptive to new ideas. It must be aware of and alert to changes that are always occurring; otherwise it will be replaced by a "younger and more progressive firm".

The longer a firm operates the more likely it is to settle down into a fixed routine, with carelessness in back, and short sightedness and complacency in front. Some firms are merely trying to exist on their past reputation. It cannot be done.

To avoid becoming a victim of the condition just described, a bit of self examination is in order. What are the company's present policies in relation to production methods, equipment, inventory, sales, service, public and employee relations? If any one or all of these things do not conform to modern demands, it is high time they are brought up to date. Consultants are available to determine the present status and suggest remedial measures.

REPRINTS AVAILABLE

"CLEANING AND PREPARING METAL SURFACES FOR THE APPLICATION OF MODERN PAINT COATINGS"

from the November, 1951, Issue.

PRICE 10 CENTS PER COPY— Stamps Accepted.

INDUSTRIAL FINISHING Magazine

1142 N. Meridian, Indianapolis 4, Ind.

Choose and Train Your Own Future Foremen

★ It is my observation that foremen finishers of ability, experience and dependability are hard to find. In many cases manufacturers are appointing men who are merely good executives, and then leaving the solution of all practical finishing problems up to technicians attached to the finishing supply houses.

These houses are glad to perform this service for their customers but it can become expensive, and the cost must be reflected in the price of their materials.

Reasons for this condition are many and varied. The solution lies partly in the decision of management and

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

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The development and marketing of these outstanding and successful coatings are represented by our systems for Crown Finishing, Closure Finishing, Can Decorating, Exterior Signs, Metal Awnings, High Heat Finishes for Heaters, Extreme Chemical-Resistant Finishes, Anti-Corrosive Finishes . . . these are some of our typical accomplishments. Epoxy, Vinyl, Alkyd, Acrylic, Phenolic and Oleoresinous types . . . these newest tools available to the Coatings Industry are embodied in these specialized finishes.

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INDUSTRIAL FINISHES · PAINTS · PLASTICS · CHEMICALS

This new edition is an excellent text and reference book of 758 pages, containing a tremendous amount of authentic and complete information on industrial solvents and their uses—for example, in cleaning and finishing materials and wherever solvents are used in industry. The revised contents are organized and classified in easy-to-read, easy-to-find form for practical busy men.

Its practical contents are divided into 16 chapters, some of which include such headings and sub-headings as solvents, non-solvents, evaporation rate, boiling point, flash point, toxicity, viscosity, safe handling, hydro-carbon solvents, alcohols, ketones, acids, ethers, esters, etc. It contains many new charts, illustrations and conveniently tabulated material, all developed to help the reader grasp the factual information quickly. The alphabetical subject index covers 11½ pages.

This book will prove valuable to key men in the industrial field, who have responsibilities in connection with the cleaning, surface conditioning or preparation of products for painting, plating or polishing, and those concerned with the selection, purchase, storage, handling, testing or use of finishing materials and thinners for same.

Price $12.00—Money Back Guarantee.

INDUSTRIAL FINISHING

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partly in the hands of men who are now foremen finishers. Assistant or under-study foremen finishers must be carefully chosen and trained for the future.

Who to choose may be left up to management or the present foreman's good judgment — but, of course, it must be someone with intelligence and more than average interest.

A method I have used successfully, to find the extent of a man's interest, is to leave a few finishing text books on my desk where everyone can see them. Some will ignore them; others will pick them up and glance at the titles only; but eventually someone will ask to borrow one or more of those books for a week-end. If he follows up the reading of these books with some questions, he's your man.

Now don't just make this man someone to whom you relegate all of the dirty jobs. Train him to the best of your ability. Give him some duties a little above the routine. Discuss your problems with him and explain your solutions. Give him an occasional problem to solve himself. Above all, as he advances in his learning, see that he gets paid for it.

I believe you'll find that you, your department, and eventually the entire industry as a whole, will benefit from this cooperative action. It's greater than just a finishing problem and, as I said, the solution is in the hands of present foreman finishers. I am proud of some of the results I have obtained. —*Roland F. Whitney.*

Static Electricity; Clothing; Serious Fire Hazard

★ This is aimed at finishing room foremen and safety directors of many factories using the highly combustible solvents that are so common in production finishing today.

Fire insurance codes and state fire

Everything
For Wood Finishing

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regulations cover the most common fire hazards pretty thoroughly, and these rules are usually respected and adhered to (although many small plants have gotten by with the most flagrant violation imaginable; smoking in the finishing room; supervisors even smoke while spraying). If the buildings blow up and injure only the violators then justice would prevail, but things just don't work out that way. Many innocent people may be hurt—perhaps fatally—because of the carelessness of one.

The average, well organized industrial firm will allow only vapor proof electrical fixtures and motors in finishing rooms; all metals used in conjunction with solvents must be nonferrous; solvents are kept in safety cans; no smoking is allowed except in approved safety areas; and no open flames are allowed.

All of these precautions are good and necessary, but there is another hazard that requires training and individual thinking to overcome. This is static electricity caused from silks and rayons.

While it is customary to specify that the wiping cloths and baled rags that are purchased contain no silk or rayons, nevertheless an occasional piece gets in. The possible danger can be cut to a minimum if workers are cautioned to avoid using any of these materials.

The most violated of all precautions designed to prevent static electricity in finishing rooms is clothing worn by women workers. Of course those pretty blouses are nice to look at and probably those rayon underthings are comfortable — but this beauty and comfort go only a short way in paying for the suffering or loss of life that can be caused by a single spark of static electricity at

NEW PERIOD
SETS THE PACE IN
PRODUCTION FINISHES
This line of better looking . . . longer lasting . . . easier to apply finishes is setting a new standard in the industry. See why New Period leads the field—try a 5 gallon working sample at drum price.
• Fillers and Stains
• Lacquers—Clear and Semi-Gloss
• Sealers
• Lacquer Enamels—Flat and Gloss
• Synthetic Enamels
MANUFACTURERS OF FINE WOOD AND METAL PRODUCTION FINISHES
NEW PERIOD Production Finishes
ESTABLISHED 1917
NEW YORK WOODFINISHERS' Supply Co. INC.
109 IMLAY STREET BROOKLYN, N. Y.

the wrong time. This is not just a "scare" statement. There are too many small flash fires occurring around finishing rooms that apparently cannot be explained from any mechanical defect or obvious open fire hazard. But in checking the clothing of the workers it is found that many are wearing rayons and silks.

Only recently a woman was horhibly burned while washing her hands with VM&P naphtha to remove some filler. She was in a clean, well ventilated room, using a cotton cloth to wash with, but that rayon blouse she was wearing was like a small generator. She was the only one in the group burned but that was one too many.

Cases like this are not necessarily due to any lack of safety rules. Perhaps they cannot be described as carelessness in the narrow sense of the word, but they can be described as thoughtlessness — and this lack of thinking can endanger the lives of the workers and the livelihood of a community.—*Herman Hardesty.*

Roller Method of Coating Wire Fences

Pictures tell the story, in a new folder of the new roller method of coating wire fence as completely as developed by The Rust-Oleum Corporation, a manufacturer of rust preventives.

This new roller method cuts wire fence maintenance costs by combining the exclusive penetrating qualities of Rust-Oleum's fish oil base with the speed saturation and materials economy of a specially-designed, long-nap lambs-wool roller.

Rust-Oleum's new folder is packed with a series of "on the job" photographs that carefully illustrate the proper way to apply Rust-Oleum by this roller method. Step-by-step, it shows how to put 99% of the coating on the fence—not on the workers or the ground.

To obtain copies of this literature, write The Rust-Oleum Corp., 2799 Oakton St., Evanston, Illinois.

Round Table Talks Help Organization

★ This article might just as well have been entitled, "Memo to Management" for it is really directed to management, and it is management that will benefit most from it.

The conference table is finally coming into its own as a medium for settling differences of opinion, for establishing procedures of operation that are agreeable to all concerned, and for clearing the air of grievances, real or imagined, that exist because of someone's misunderstanding of motives, or someone's lack of knowledge of the reasons. Your stockholders, your board of directors, your sales force, you and the other top executives meet here frequently and settle, amicably, differences that you may have been quibbling about for days.

Do you extend this privilege to your foremen and supervisors?

There is always a certain amount of friction between departments, and this is detrimental to any organization. For one department head to approach another with a direct criticism, no matter how true it may be, will result in, at best, only grudging and half hearted cooperation. ("Who does he think he is?")

While in his own department, the supervisor or foreman is bound to feel, to some degree, that he is ruler of all he surveys. He will resent, perhaps only inwardly, the intrusion of any outsider, including the plant manager. Only vaguely does he feel that he is a part of the whole organization. With him it is his department, first and foremost. I can imagine your reactions if the head of some other organization stopped in some day to criticize your methods.

Put these department heads around a conference table once a week and there is an entirely diffrent atmosphere. They no longer feel as indi-

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Here is a book that answers all the questions on finishing metal products and shows the methods, techniques, and cost factors in producing them.

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A COMPLETE PRACTICAL MANUAL covering usual types of finishing—galvanizing, polishing, plating, lacquering, painting. Also discusses fully such subjects as use of color and production and use of prefinished meterials.

COVERS FINISHING from a business and sales standpoint. Deals with methods that improve results and reduce costs. Helps you determine types of finish with greatest sales appeal.

EXPLAINS SHOP TECHNIQUES. Tells how to reduce polishing and buffing costs. Gives techniques for cadmium plating, chromium plating, spray coating. Tells how to use enamels and lacquers in metal parts production.

This up-to-date, handy manual should be at the finger-tips of plant managers, superintendents and foremen. Send your remittance today to

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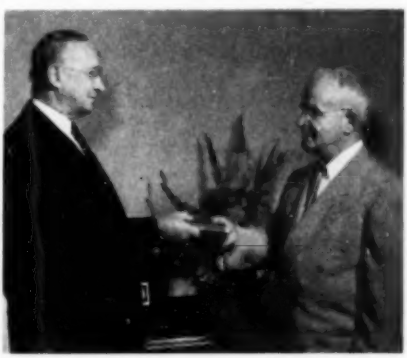
viduals. They are meeting on a common ground to discuss problems that no longer seem to be personal but are important to the whole. Reasons are discussed and understood for things that heretofore have been regarded as plain pig-headedness.

Schedules of operations are worked out to the best advantage of all concerned, including management, which, naturally, should be represented at these meetings. With so many heads working on it, quite often the solution to a problem that has stumped the foreman of the department concerned, is arrived at. Best of all, the solution is accepted without any feeling of antagonism for it is no longer an individual problem but a common problem.

After a few of these meetings you will find that the feeling of being part of a team doesn't end at the conference table but is carried back to the department; it even spreads, to some degree, to the employees in the department. Gripes between departments will be saved to become subject for calm, unbiased, consideration at the round table. Now you have become a true organization. — *Roland F. Whitney.*

Foy Paint President Honored By Company Employees

Employees of The Foy Paint Co., Inc. assembled at their plant one day early last month to honor their President, Mr. George W. Schneider, Jr. Mr. Schneider was presented with a gold wrist watch by the Chairman of the Board, Mr. E. A.



George W. Schneider, Jr., President of Foy Paint Co., receives gold wrist watch being handed him by E. A. Foy, Jr., Chairman of the Board, in behalf of the employees.

Foy, Jr. who, in behalf of the employees, paid tribute to Mr. Schneider's efforts in sparking a successful path for the Company during the last half century.

Mr. Schneider joined the Company as Bookkeeper in 1902. In 1908 he was elected Secretary; in 1911 he became Secretary and Treasurer; in 1936 he was appointed Executive Vice President; and in 1947 became President.

The Foy Paint Company, manufacturer and distributor of paint products, lacquers, varnishes, and industrial finishes, now occupies, exclusive of the area of the branch stores, five acres of land, and floor area in a group of 22 buildings amounting to over 18,000 square feet. The Foy Paint Co. is located at Cincinnati.

Students Learn About Spray Guns and Compressors

Students in the DeVilbiss Co. spray painting classes are given a thorough indoctrination in the principles involved in DeVilbiss equipment as well as its operation, use and care. During a recent

Students taking apart a new spray gun.

class attended by 20 jobber representatives, two of the students halted classroom labors to check the products themselves.

Before completion of the course these men will have training, not only in the spray gun they are disassembling but also in air compressors and the many other products in the DeVilbiss line.

The school is operated free of charge to users and sellers of DeVilbiss products. Application may be made by writing the DeVilbiss Co., Toledo 1, Ohio.

Air Filter and Regulator Offered by Sharpe Mfg. Co.

Three new models of an improved air filter and regulator unit for use on compressed air lines, are announced by Sharpe Mfg. Co., 1224 Wall St., Los Angeles, Calif. All three models have the new replaceable cartridge filters. The models are numbered 303A, 303B and 303C. Further information about these new units can be obtained by writing the company direct.

New York Woodfinishers' New Service Department

New York Woodfinishers' Supply Co., Inc., located in Brooklyn, N.Y., manufacturer of New Period Industrial Finishes, announces the appointment of Mr. Arthur Egner to head its new Service Department.

Mr. Egner has a background rich in practical experience in almost every phase of finishing and plant operation. His knowledge of finishing problems, efficient production procedures, and cost economies, will make him invaluable to users of New Period products.

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Silicone Exposition Travels

The Dow Corning Silicone Exposition has resumed its tour of showings in leading industrial areas of the country.

Although several new demonstrations and sample products have been addd, the huge display is basically the same as seen last year by over 17,000 executives and engineers, representing over 4600 different plants. Designed to show the remarkable properties of the silicones, it also illustrates their usefulness as new engineering materials. Slanted at a technical and engineering level, the Exposition is not open to the general public.

Dozens of demonstration units put silicone products through their paces, while literally hundreds of actual product assemblies, sections, cut-aways and parts show their practical value on the job.

The Silicone Exposition is the most comprehensive display on the subject ever assembled. Over ten tons of equipment and materials go to make it up. About 1½ hours is required to see it all. A staff of some 12 laboratory men and branch office representatives is on the floor at all times to explain details and answer technical questions.

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All paint restored to original consistency without opening the can.

2 minutes per gal.

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Stephen Sesnick Represents Lowe Bros. Co. in N. Y.

The Lowe Brothers Co., paint and varnish makers, Dayton, Ohio, have appointed Stephen Sesnick as Industrial Sales Representative in the New Jersey and lower New York state area.

Mr. Sesnick, a graduate of City College of New York, has been actively engaged in the industrial finishing field for over seven years in the capacity of a formulator and sales service representative. His wide experience and training in the use of proper industrial finishes and methods of applications will enable him to provide competent assistance to Lowe Brothers industrial accounts throughout the eastern market.

DuPont Finishes Division's Sales Activities Expand

Frank H. Beadles has been named an assistant director of sales of the DuPont Company's Finishes Division. Mr. Beadles, who for the last year had been manager of the division's Plant Technical Section, will share administrative responsibilities with Joseph B. Dietz, assistant director of sales since February, 1951.

Harold R. Lounsbury, director of sales, said that the appointment of an additional director resulted from expanded sales activities in the Finishes Division. He pointed out that finishes sales have more than doubled in the last ten years, and that the division has greatly in-

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creased its sales facilities and sales efforts.

Mr. Beadles will be responsible for direction of automotive, specialties, and export sales and transfers, and will have supervision of the sales managers involved. Mr. Dietz will retain direction of industrial, trade, and refinish sales, and supervision of the Wilmington sales managers involved, and of the regional sales offices other than Detroit.

M. D. Phelps Joins Thompson

M. D. Phelps has been appointed coordinator of development and sales of Vinsynite, the pretreatment coating that adheres tight to all metal surfaces, according to an announcement by Thompson & Co., Oakmont, Penna.

Mr. Phelps was graduated from Randolph-Macon College and, after receiving his Master's degree in Chemistry from Lehigh University, he became a member of the staff of Mellon Institute of Industrial Research, participating in the Carbide & Carbon Chemicals fellowship.

He was later affiliated with the Bakelite Co. in development and technical sales, and immediately before his appointment to the Thompson staff, was sales manager for Plastic Sales & Engineering Corp.

"Aluminum Forming" Manual

Metal working men will find a wealth of information on how to draw and form aluminum sheet, plate, tubing, and pipe in "Aluminum Forming", a new 148-page technical manual just published by Reynolds Metals Co., 2500 S. 3rd St., Louisville, Kentucky.

The manual points out that the most common mistake is the attempt to work and form aluminum by the identical techniques used for other metals. While similar techniques may be employed in some operations, others require special procedures. Then too, selecting the proper grade of aluminum to use for a specific application is of utmost importance.

CLASSIFIED ADVERTISING

The rate on ads appearing in this department is $1.00 per line of 6-pt. light face type, per insertion. Minimum charge, $5.00. Ads set in 8-pt. extra bold face type cost $2.00 per line, per insertion.

POSITION WANTED.

30 years' experience in color and wood filler chemistry for industrial application. Best of references. Address IF-938, care Industrial Finishing.

POSITION WANTED.

Salesman for industrial finishing materials and paints of all descriptions. Will accept any territory with well-known manufacturer. Address IF-939, care Industrial Finishing.

SLASH YOUR COSTS.

We produce quality control, production efficiency and cost control. Save and get top production in your Finishing Dept. Efficiency and quality at less cost to you. L. A. location. Address IF-941, care Industrial Finishing.

COLOR STYLIST AND FINISH ENGINEER.

Furniture manufacturers in Chicago and surrounding areas—Free—the services of a Grand Rapids color stylist and finish engineer. Address IF-940, care Industrial Finishing.

POSITION WANTED.

For the past 18 years have specialized in finishing department problems as related to increasing production and overall efficiency. Have an excellent background with respect to various types of baking equipment, spray equipment, materials, methods, automatic conveyor lines, degreasing and Bonderizing operations, etc.

During this period have been engaged by many large industrial plants as a Consultant on finishing problems. The management of companies serviced have placed high regard in my recommendations and I have wound up with their confidence for a good job done.

I am able to furnish the best of references and available to travel or take position either in this country or foreign location. Address IF-942, care Industrial Finishing.

FINISHER WANTED.

Furniture finisher capable of taking charge of finishing department of custom furniture shop. (Not a production shop). New and old world antique reproductions. This job requires experience and skill. Give full particulars, references and salary expected. Address IF-943, care Industrial Finishing.

VARNISH CHEMIST WANTED.

Need knowledge of furniture varnishes and grinding liquids. Also be able to formulate industrial and trade sale pigmented products. Good pay. PERFECTION PAINT & COLOR COMPANY, Indianapolis 2, Ind.

Excellent Position Vacancy.

Laboratory chemist or formulator experienced in synthetic enamels and clears for industrial coatings end use. Midwest location. Send full particulars including salary requirements to JOHN HOLLE, FINISHES DIVN., INTERCHEMICAL CORP., 1754 Dana Ave., Cincinnati 7, Ohio.

CHEMIST WANTED.

Recent graduate of Organic Coatings Laboratory. Experience not necessary. Reply giving full personal data, education, experience and salary expected. THE NATIONAL CASH REGISTER COMPANY, Dayton 9, Ohio.

CHEMIST WANTED.

Lacquer chemist. Must be well versed in furniture lacquer. Unusual opportunity. SPENCER WOOD FINISHING CO., Granite Falls, N. C.

CHEMIST WANTED.

Lacquer and enamel chemist. Must be experienced in product control and valuation. Newark N. J. area. Write qualifications. Address IF-944, care Industrial Finishing.

LACQUER CHEMIST WANTED.

Graduate chemist. Age 24-30. Approximately 2-4 years experience in lacquers, organic solvents; wanted for Technical Service Work. Sales experience useful. Excellent position for young chemist for both laboratory and contact work. Prefer applicants from Newark, N. J. and New York City areas. Please give full information in first letter. Address IF-945, care Industrial Finishing.

CHIEF CHEMIST

Wanted immediately, by Chicago manufacturer of highest quality line Industrial Finishes. Must be experienced in formulating wood and metal lacquers, enamels, thinners, stains, fillers, etc. Excellent opportunity for man who can qualify. Permanent position. Give full particulars in first letter. Address IF-946, care Industrial Finishing.

OPPORUNITY FOR LACQUER CHEMIST.

Fifty-year old firm producing industrial finishes, desires man capable of developing lacquer plant from scratch. Experience on furniture finishes necessary. Unlimited opportunity for right man. Location northern Pennsylvania. Confidential reply. Address IF-947, care Industrial Finishing.

CHEMIST WANTED.

Experienced in Vinylacetate; graduate chemist; age 24-30; with 2 to 5 years experience in Polyvinylacetate; wanted for development work; both laboratory and outside technical service work. Please give full information in first letter; age, experience and salary desired. Address IF-954, care Industrial Finishing.

SALESMEN WANTED.

Territories open in northern Illinois, southern Indiana and Grand Rapids, Mich., for salesmen with following in industrial finishes. Address IF-948, care Industrial Finishing.

INDUSTRIAL SALES MANAGER WANTED.

Company manufacturing all types of Industrial Products, interested in hiring man who has sold industrial accounts personally. All members of our organization are familiar with this ad. Address IF-949, care Industrial Finishing.

SALESMAN WANTED.

Experienced in selling industrial paints, lacquers, enamels. Moderate size, well-known manufacturer has opening for salesman with following in metropolitan New York area. Must have car. Drawing against commissions. Exceptional opportunity for right man. Address IF-950, care Industrial Finishing.

SALES REPRESENTATIVE WANTED.

High calibre industrial sales representative with sound technical background. Central West territory. Association with progressive company of good reputation, having an excellent laboratory, a line of quality products with some unusual specialties. Should provide right man with opportunity for volume sales and corresponding compensation. Written application only. Confidential. Address IF-932, care Industrial Finishing.

SALES MANAGER WANTED

For midwest manufacturer of industrial finishing products for wood and metal. Great opportunity for right man to make big money. We have 18 experienced salesmen as a team for greater development. Man must be a leader and experienced in this trade. Address IF-933, care Industrial Finishing.

INDUSTRIAL FINISHES SALESMAN WANTED.

Eastern Pennsylvania territory available to trained, experienced salesman. Liberal commission, compensation plan. Confidential reply, giving full details. GLOBE PAINT WORKS, INC., J. E. O'Brien, Williamsport, Penna.

DO YOU SELL SPRAY FINISHING EQUIPMENT?

An expanding 23-year-old manufacturing company desires active sales representation. Will pay high commission in protected territory to qualified man. Line is complete with high acceptance in established territories. Our representatives know of this ad. Address IF-951, care Industrial Finishing.

FORD CUPS

THE VOL-U-METER COMPANY

Buffalo 16, New York

WANTED TO BUY.

We are interested in purchasing your surplus inventories of lacquers and dopes, both clear and pigmented. Kindly send samples, inventories and prices. Address IF-952, care Industrial Finishing.

WANTED TO BUY.

Will buy your dirty Thinners and Solvents. Send samples or letters giving approximate contents and solids. Address THE JOHANN CO., 8547 S. Ashland Ave., Chicago, Ill.

FOR SALE.

Very Highest Quality LACQUER THINNER

80c gallon.

Freight allowed on drum lots. HIGH GLOSS, NON-BLUSH. MICHIGAN OIL & CHEMICAL CO., 4360 Larkins, Detroit 10, Michigan.

FOR SALE.

1000-gallons Forbes Semi-Gloss Black Baking Enamel. Bakes 1 hour at 250° F. or any comparable schedule. Inside storage. Agitator type drums. No charge or deposit on drums, $1.35 per gallon. Write ALLIED ENGINEERING & EQUIPMENT CO., 833 E. Kilborn Ave., Milwaukee 2, Wisconsin.

FOR SALE.

Slightly used "American" self-cleaning continuous air filters. Type S. No. 2999, 4 ft. x 12 ft. Write GEORGE KOCH SONS, Inc., Evansville, Indiana.

FOR SALE.

BLAKESLEE D-65-F. DEGREASER complete, practically new. Working Dimension 10'-0" long, 3'-0" wide, 3'-0" high. Overall dimension, 13'-6" long, 11'-6" wide, 6'-2" high. Production, 4,000 pounds of steel parts per hour. Solvent capacity, 125-gallons. Heat, steam at 10 to 15-lb. pressure. F. H. HILL COMPANY, INC., 944-54 Washington Blvd., Chicago 7, Illinois.

PAINT FINISHING SYSTEM FOR SALE.

Includes wash and Bonderite units, water wash spray booths, dry off and baking ovens, all complete with monorail conveyor. Particularly suitable for washing machine and range parts. Capacity 8,400 pounds per hour. Conveyor speed, 4 to 12-F.P.M. Address IF-953, care Industrial Finishing.

FOR SALE.

Five-Roll Paint Grinder, 12x32-in. Roller bearing, W. J. Day Co. Combination 2-Strip continuous Painting and Baking Oven for metal strip, Hunter No. 22 C & B No. 24C. Spray Booth, 3-fan type No. 982, DeVilbiss. Automatic Painting, oven drying and buffing unit for wood Venetian blind slats or similar items. THE COLUMBIA MILLS, INC., 428 S. Warren St., Syracuse 2, N. Y. Telephone, 2-0111.

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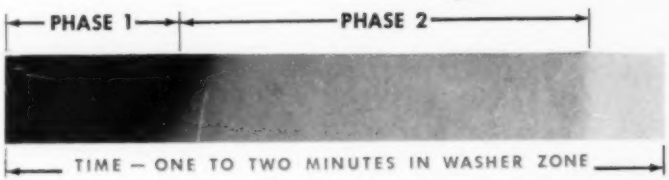
DETREX METAL CLEANERS

Visit us...

at the National Metals Exposition, Philadelphia, October 20-24. We'll be in Booth 1849.



PHASE 1 — CLEANING

PHASE 2 — RAPID RATE OF DEPOSIT

DETREX 79 cleans and phosphate coats in one operation . . .

Detrex 79 is a dual-purpose compound that both cleans and phosphate coats.

Used in a spray washer, "79" produces a fine-textured, highly adherent phosphate coating on steel and cast iron parts. This coating provides a rust-resisting surface that gives excellent adhesion for paint finishes.

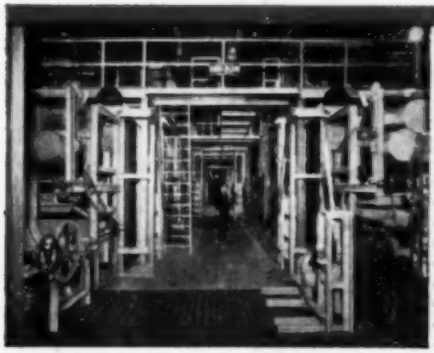
Detrex "79" is economical to use and requires no special equipment. Cleaning *and* phosphate coating of ferrous metals is done in a single stage of any standard two- or three-stage washer. Work comes out of the washer clean and with a phosphate-coated surface that dries to a uniform gray mat finish.

A trained Detrex field engineer can show you the advantages of 79 and other Detrex phosphate coatings in your plant. If a new operation is being considered, he can also give you recommendations on equipment . . . for, you see, Detrex offers you the "one-source" advantage of cleaning compounds *and* processing equipment.

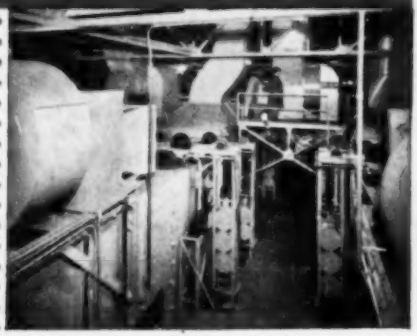
For complete information or free consultation service, write to **Detrex Corporation, Box 501, Detroit 32, Michigan.**

DETREX CORPORATION

DEGREASERS • DEGREASING SOLVENTS • WASHERS
ALKALI & EMULSION CLEANERS • DRYCLEANING EQUIPMENT
PHOSPHATE COATING PROCESSES



Rock Wool Batt Production; fibres are formed into batts, compressed to proper density and baked.



Air Heating and Handling Equipment; ovens are gas-heated, atmospheric air used for cooling.

Dual Rock Wool Processing Lines; Ovens in left background and cooling tunnels at right. In left foreground is rock wool granule reclamation; particles are collected and bagged.

KIRK AND BLUM

TWIN OVENS AND COOLING TUNNELS SPEED ROCK WOOL PRODUCTION

...at Philip Carey Mfg. Co., Cincinnati, Ohio

Recently installed at this noted insulation and building products manufacturer, twin KIRK & BLUM Ovens have increased rock wool production and assured continuous operation.

These specially designed three-temperature zone ovens bake the batts, setting the binder solution, and are individually adjustable for batts of varying thickness and density. Closed circuit cooling tunnels, handling 50,000 CFM of air each, completely cool the batts before packaging.

Whatever your needs in ovens...for drying, baking or dehydrating... consult KIRK & BLUM. There's no obligation. Write for booklet, "Industrial Ovens," showing other typical installations.

FOR CLEAN AIR... THE [illegible] TOOL

KIRK AND BLUM

INDUSTRIAL [illegible]

The KIRK & BLUM Mfg. Co. 3101 Forrer St., Cincinnati 9, Ohio

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